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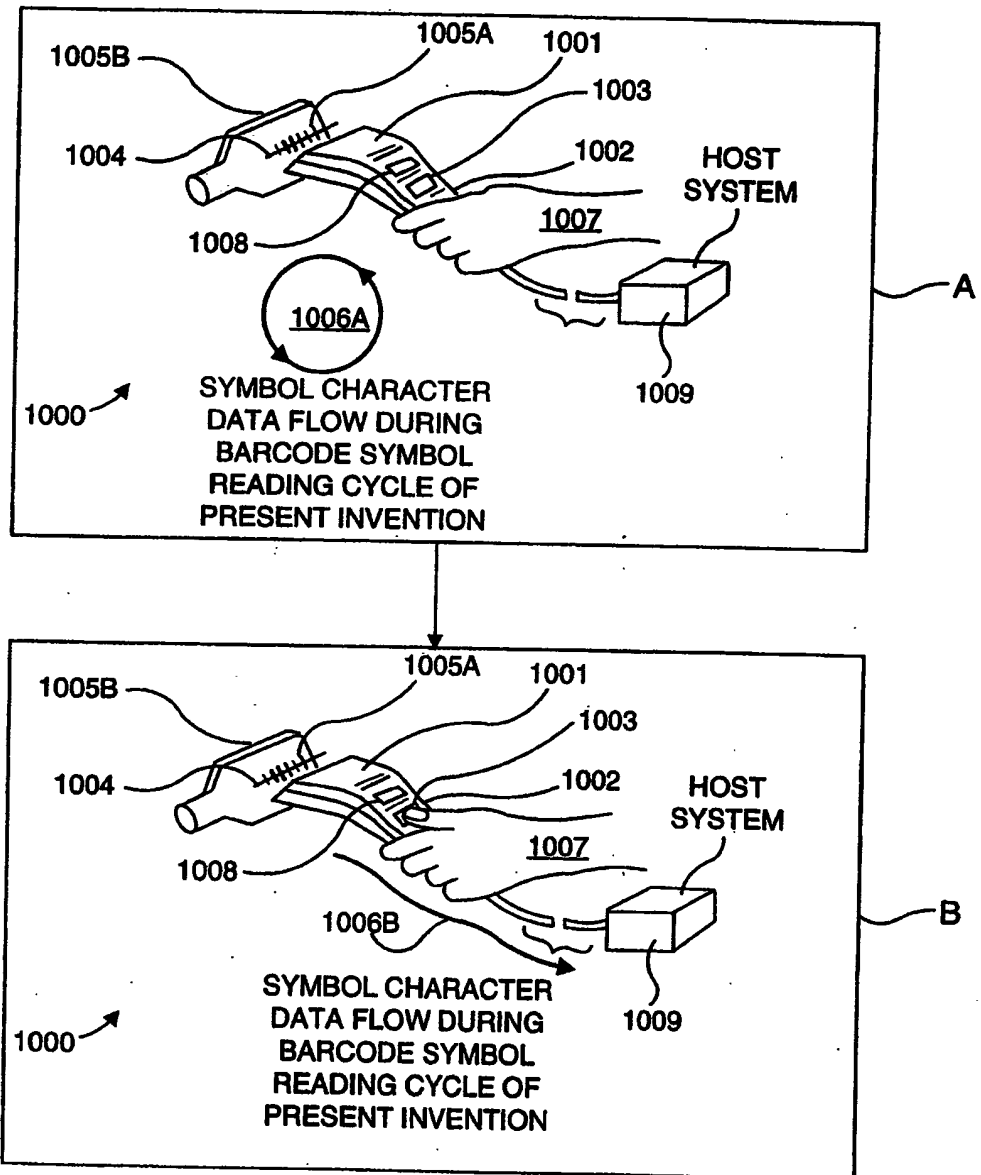


FIG. 1

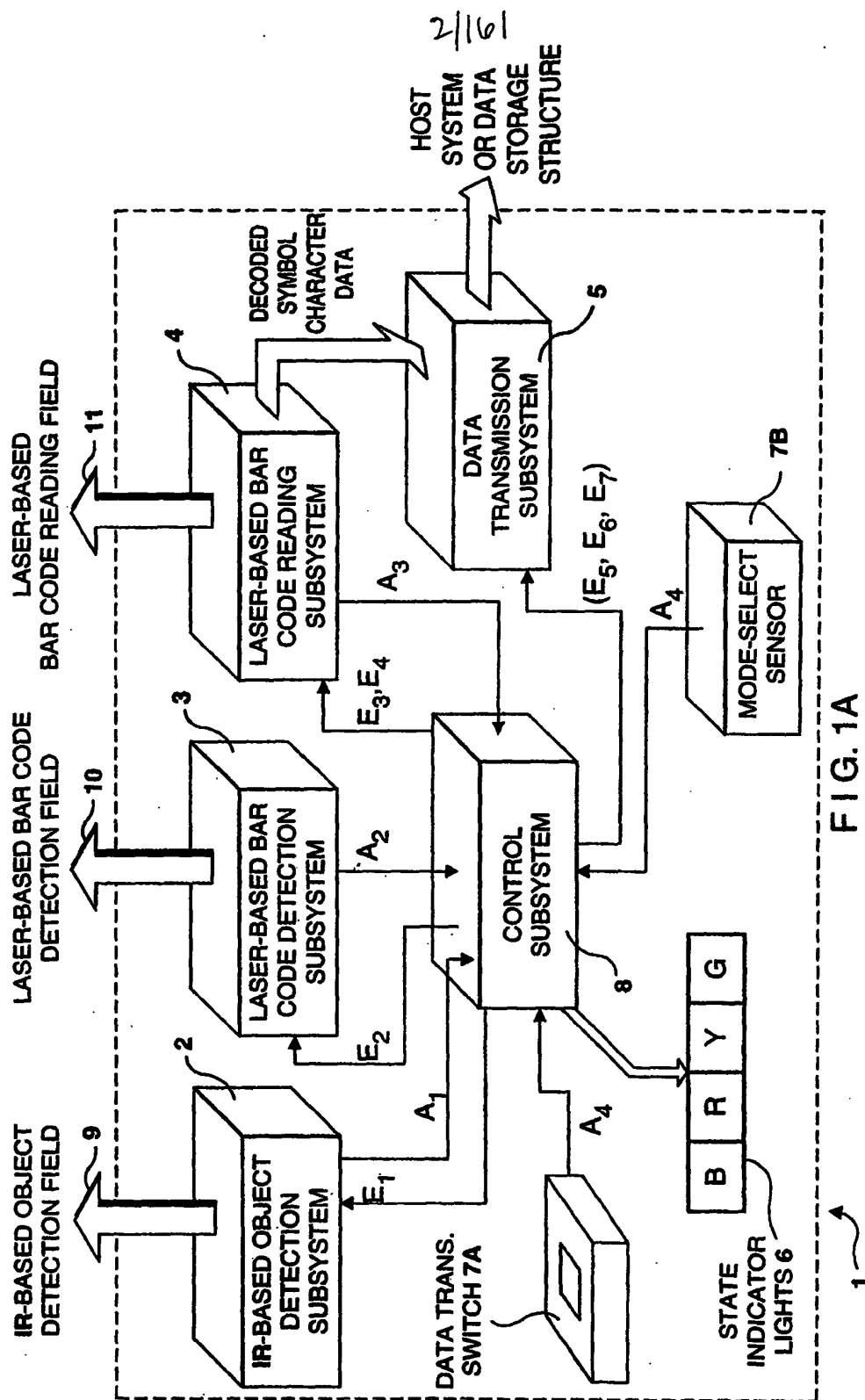


FIG. 1A

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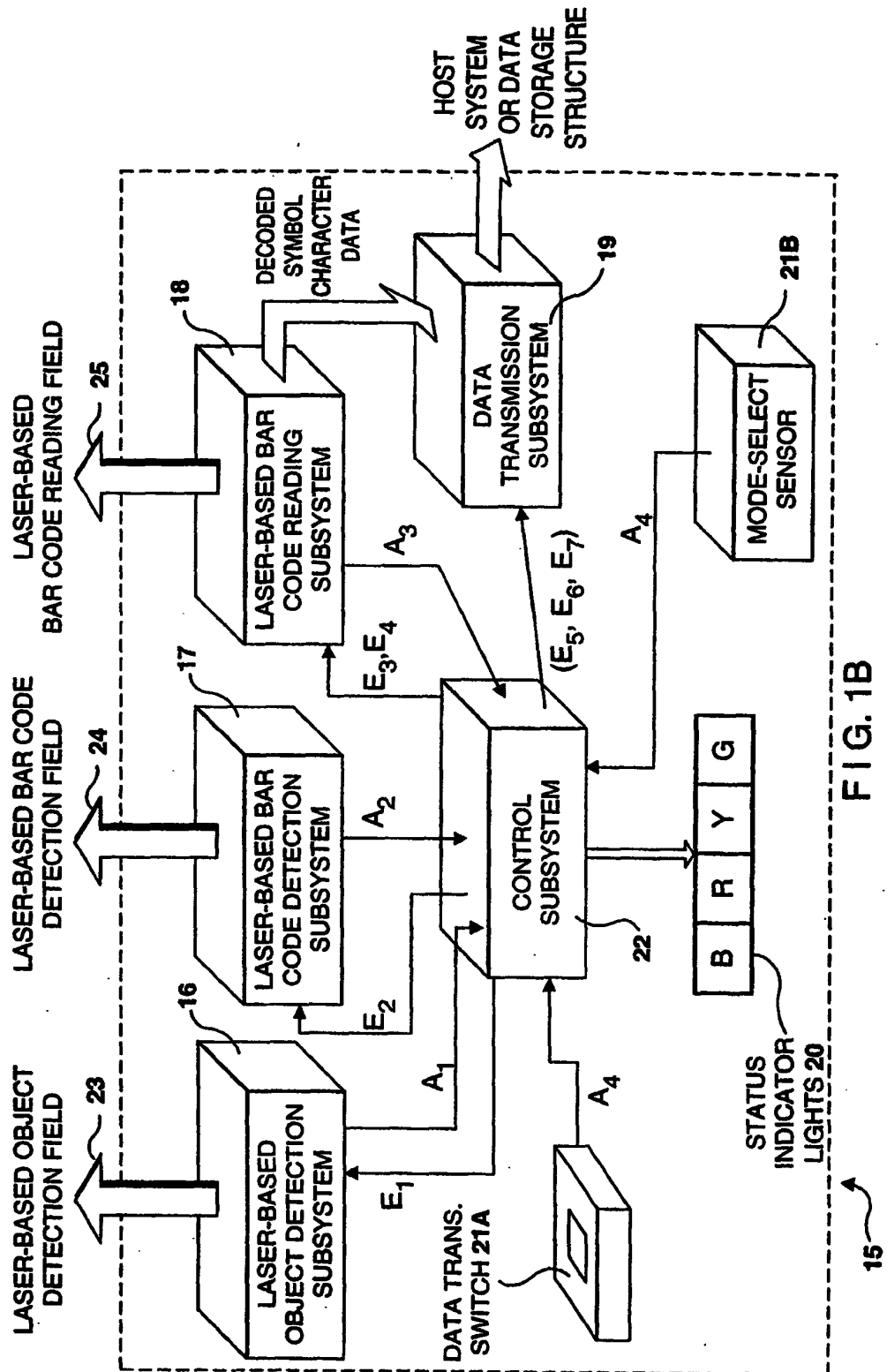


FIG. 1B

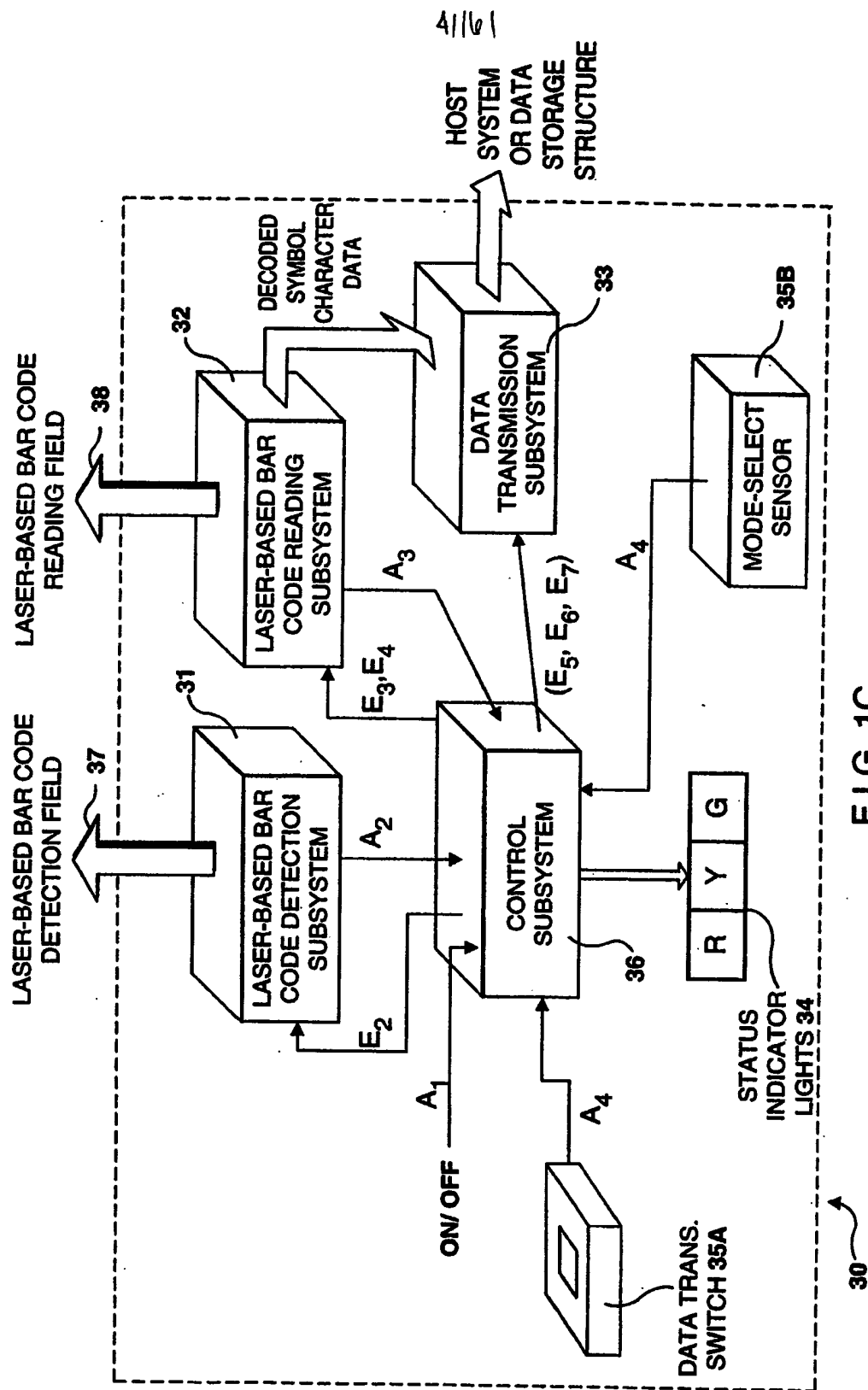


FIG. 1C

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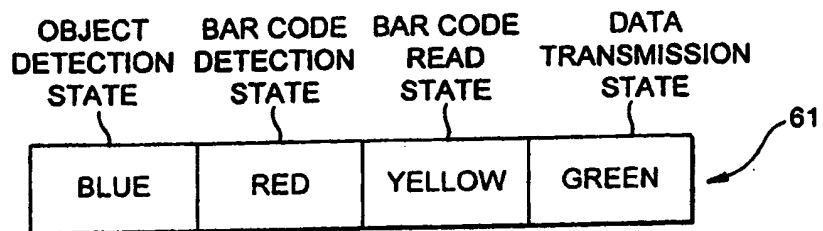
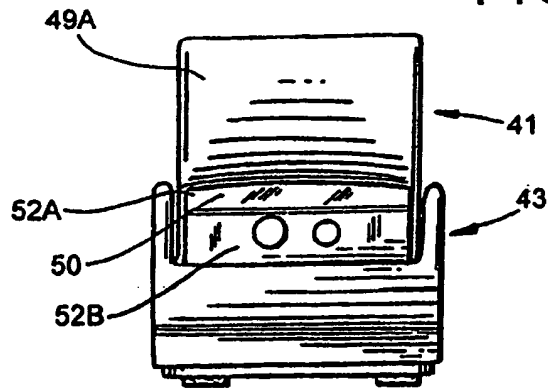
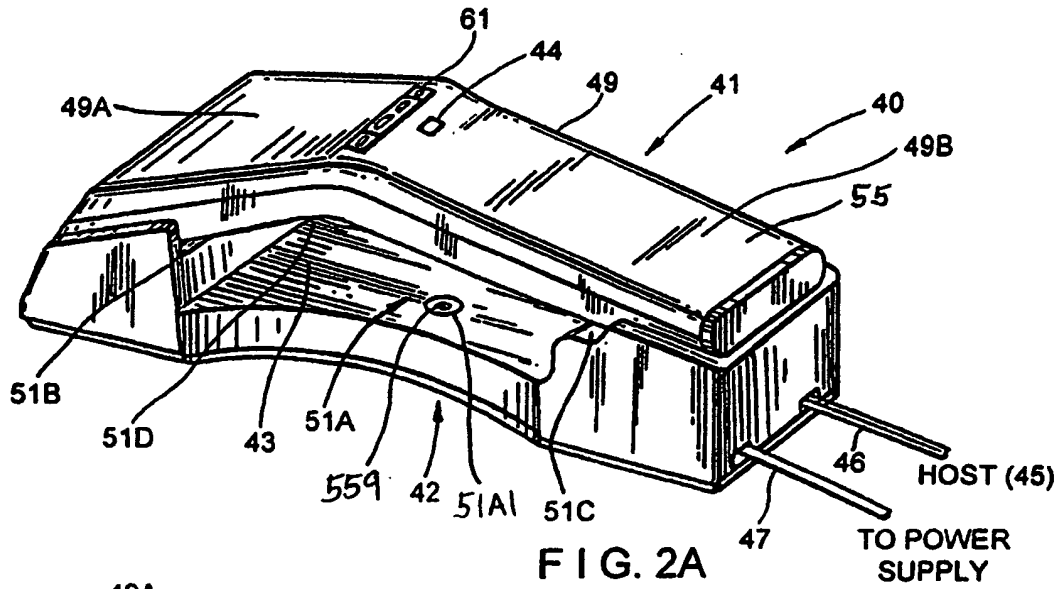


FIG. 2C

6(16)

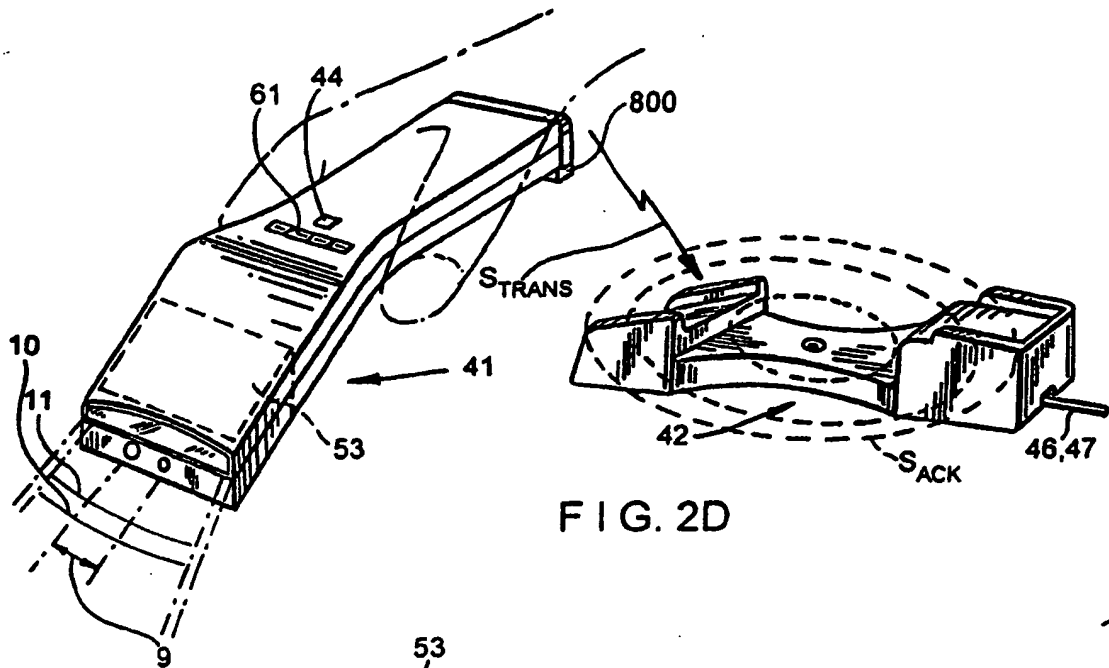


FIG. 2D

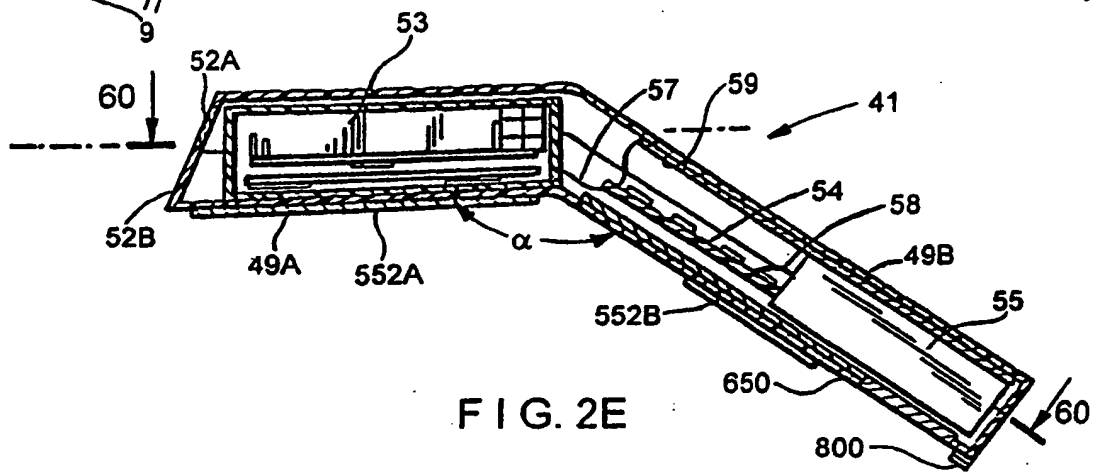


FIG. 2E

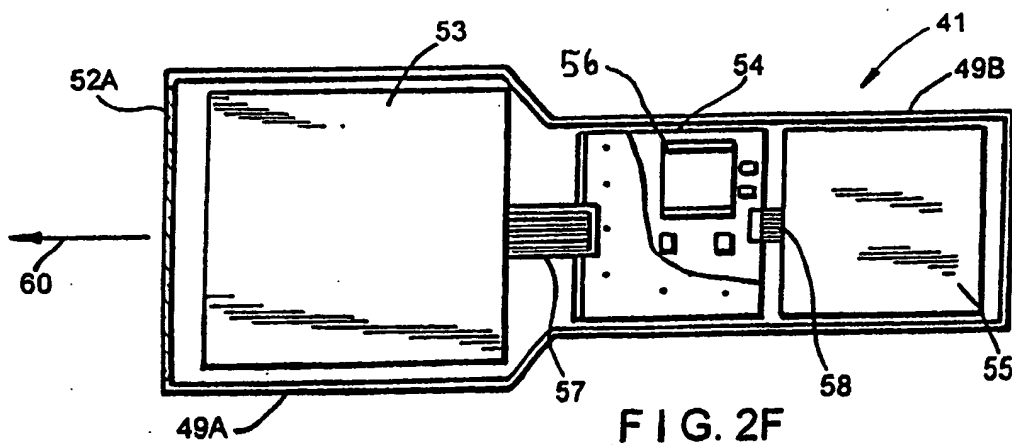


FIG. 2F

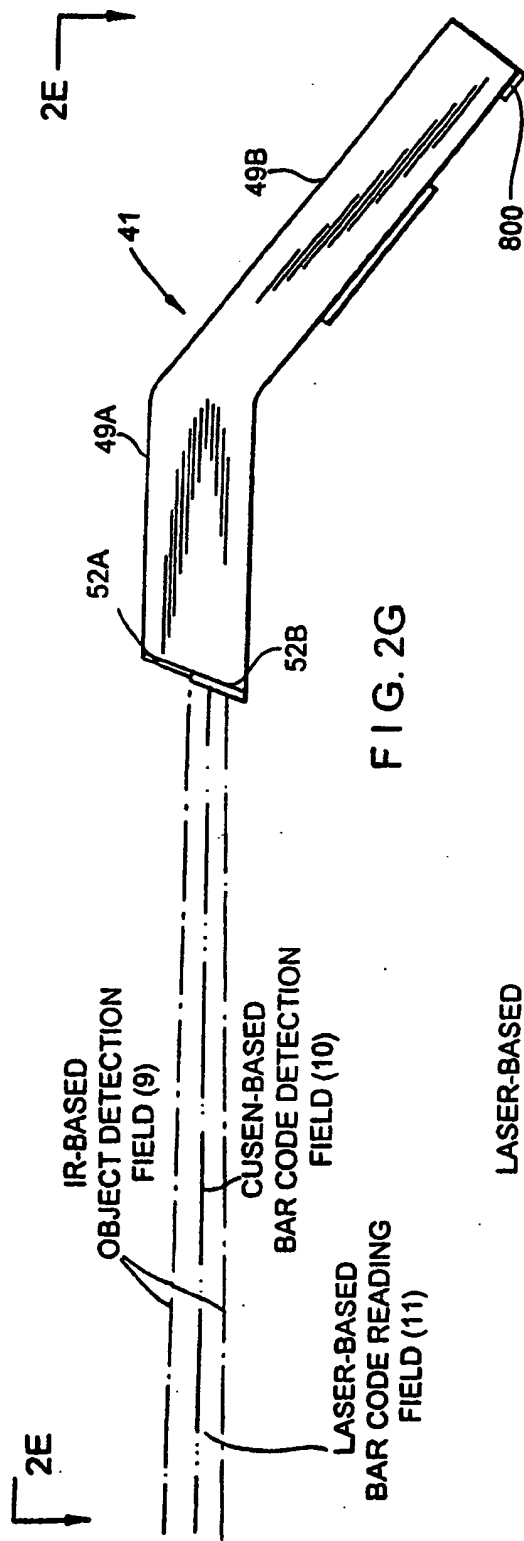


FIG. 2G

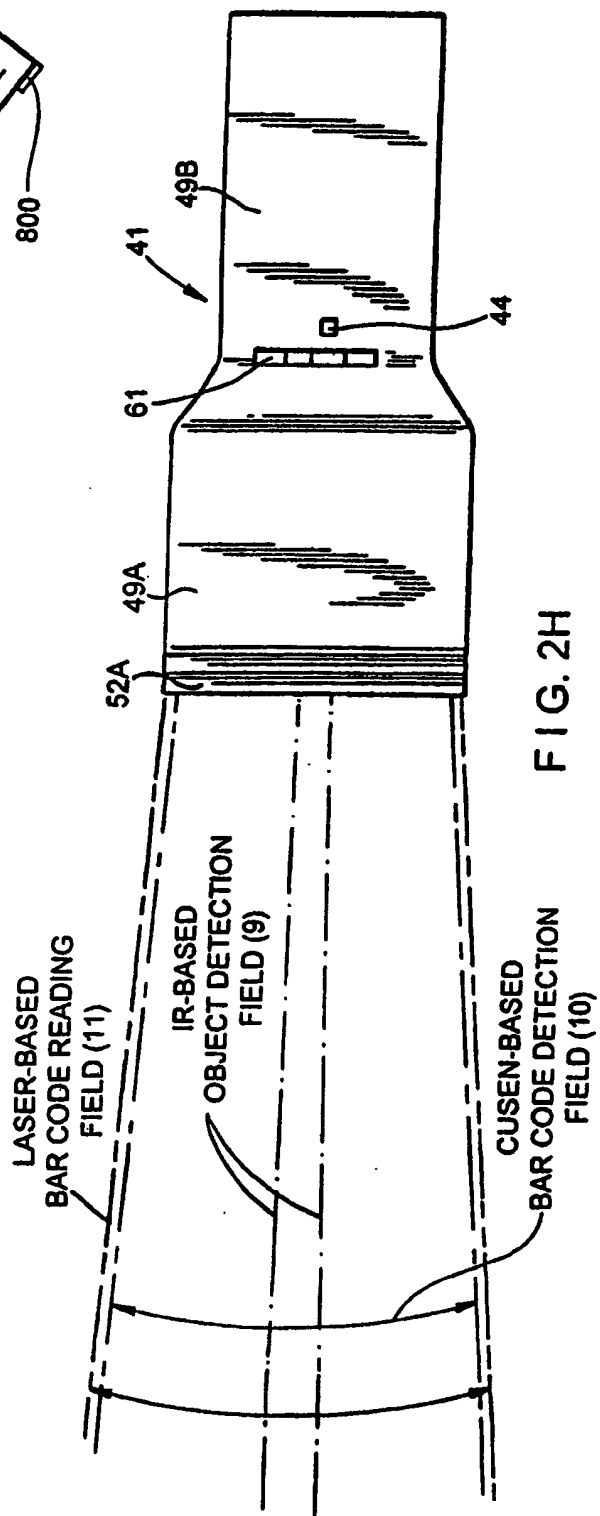


FIG. 2H

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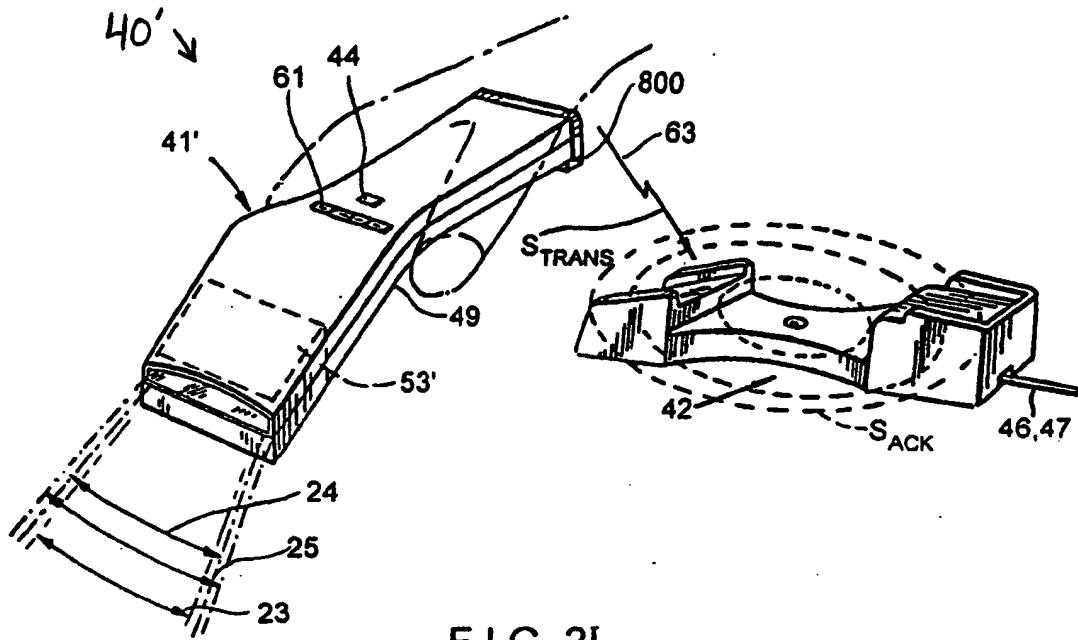


FIG. 2I

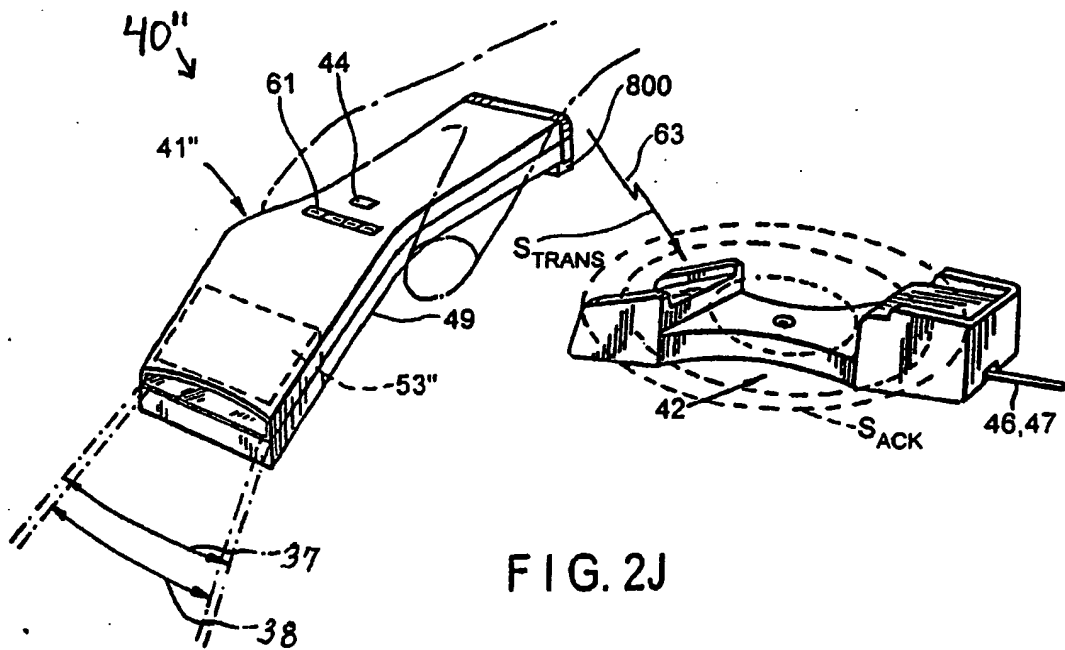
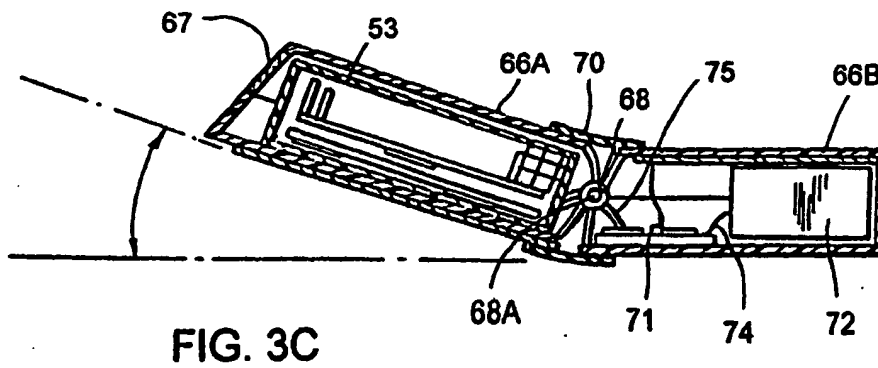
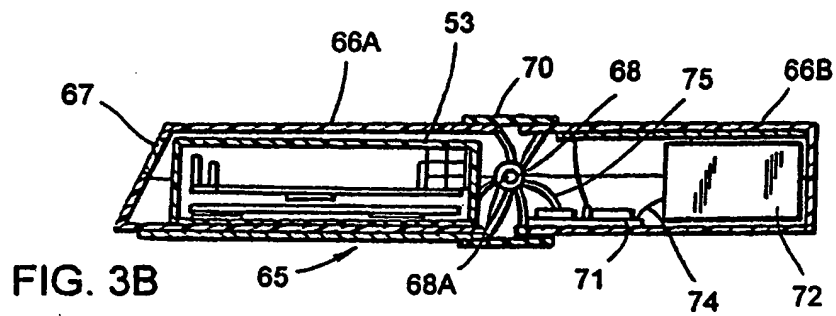
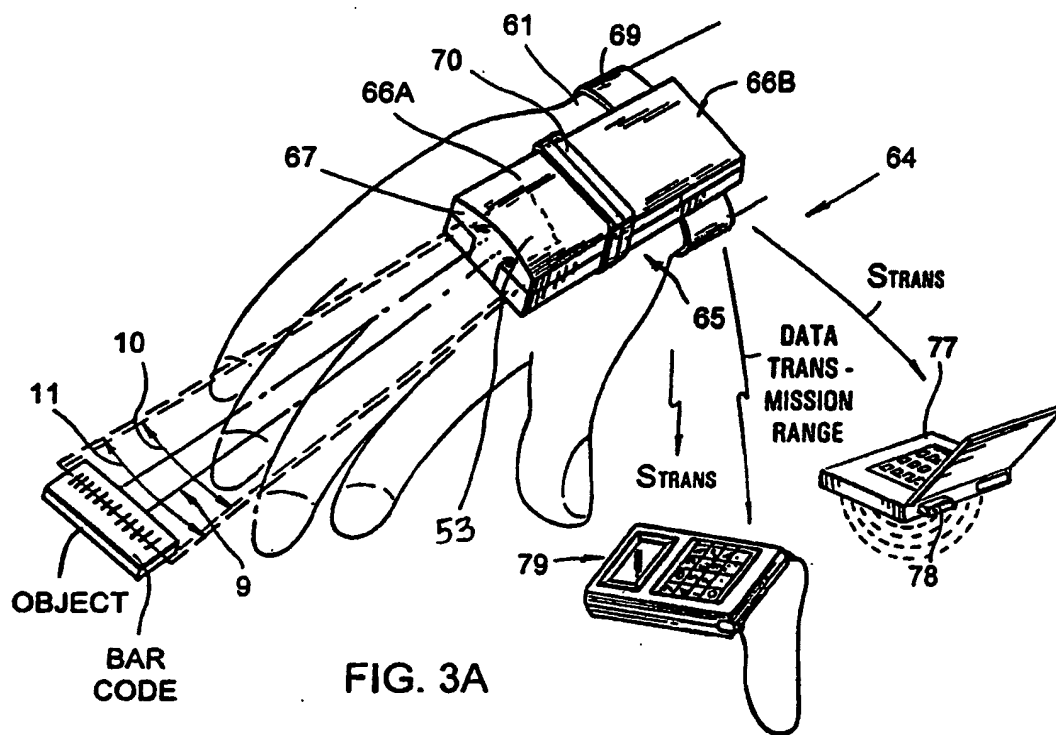
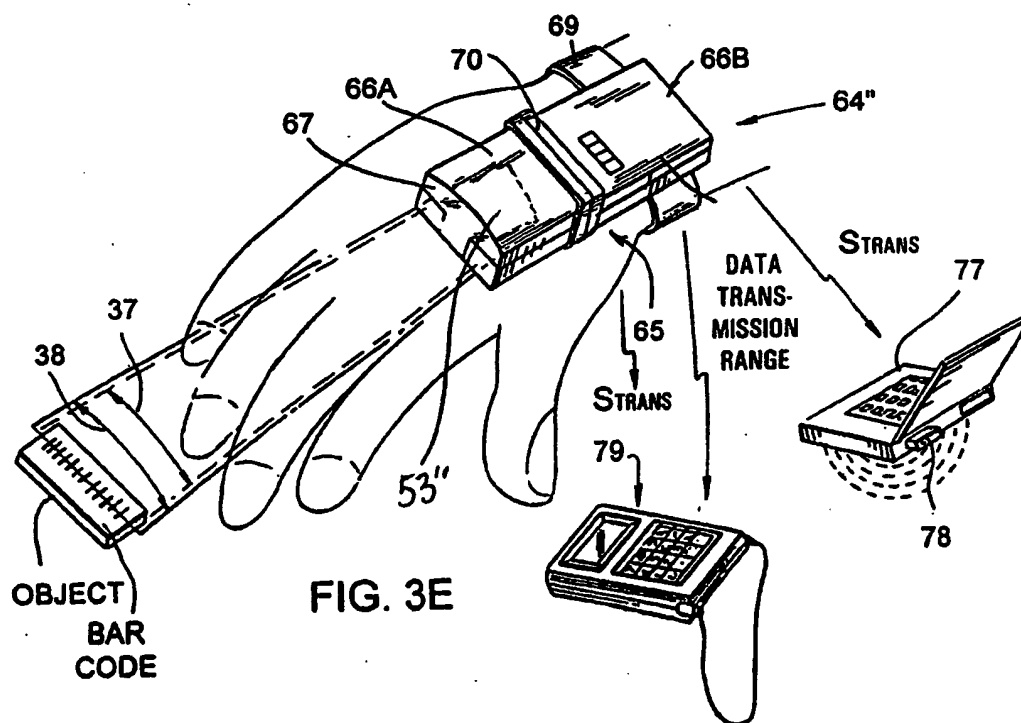
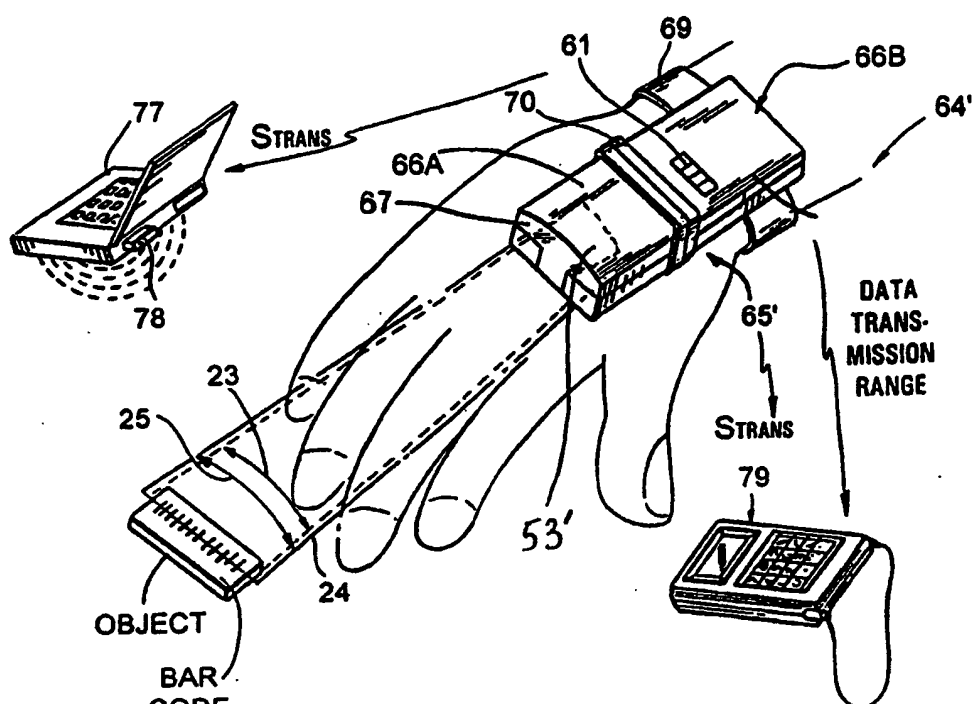


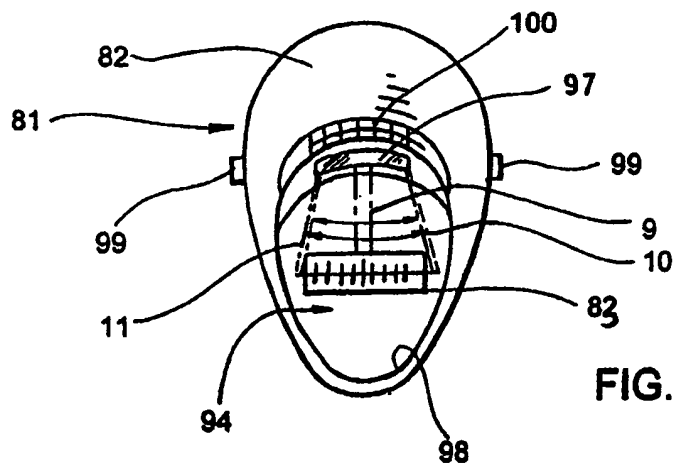
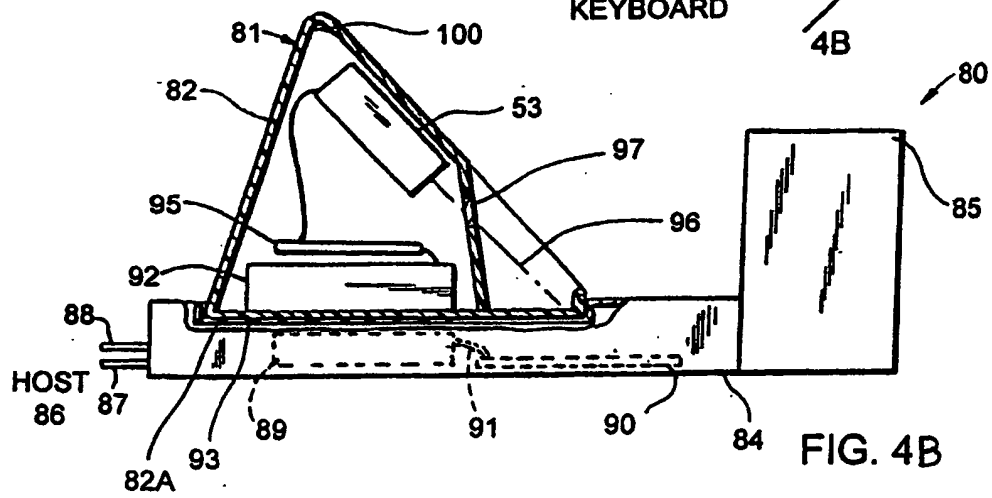
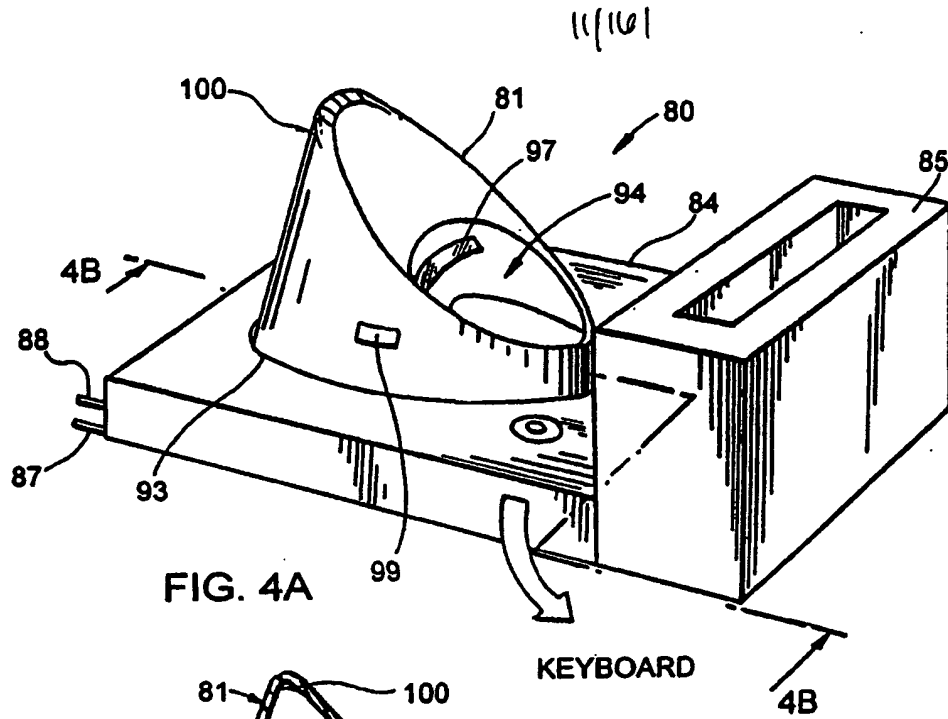
FIG. 2J



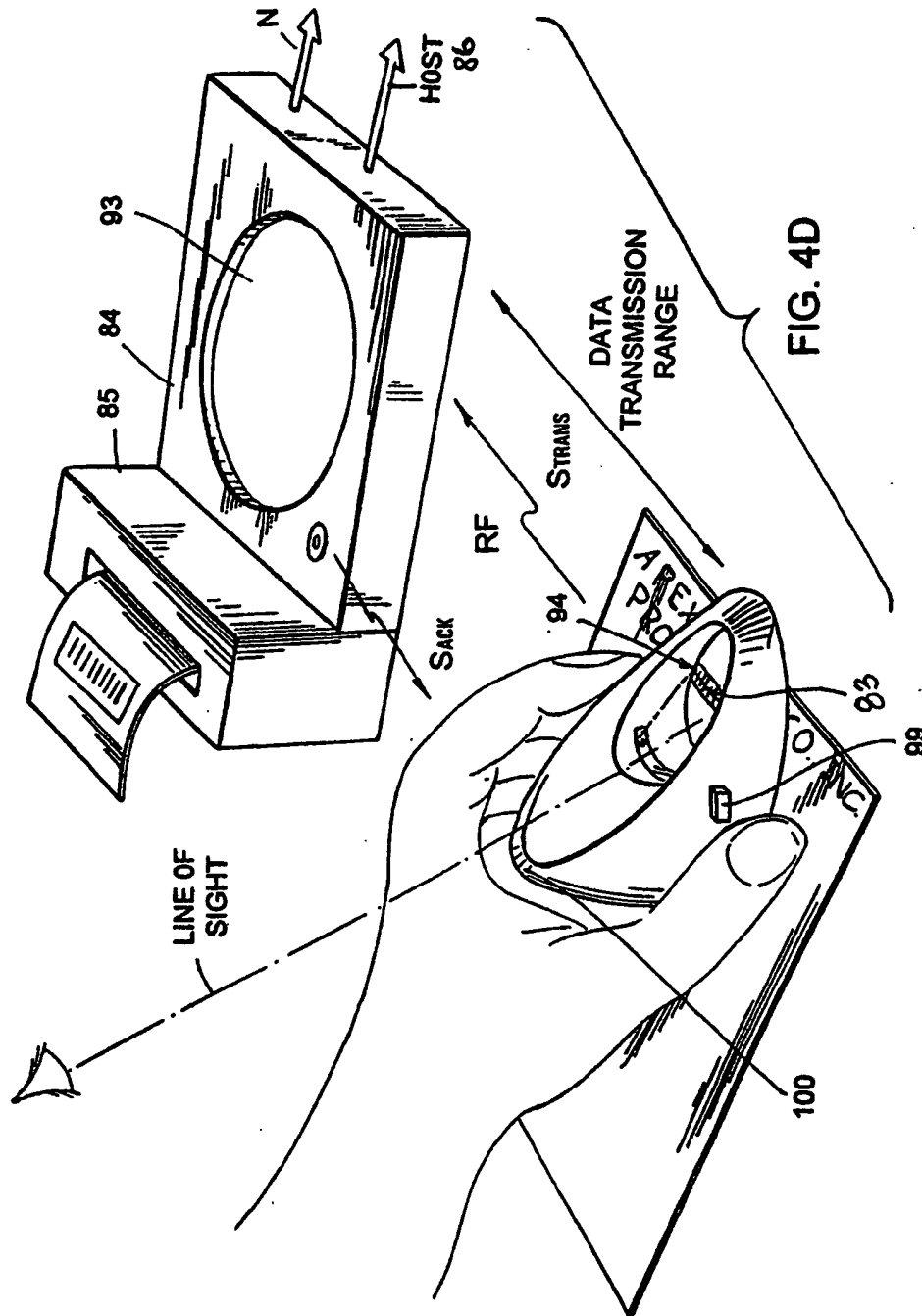
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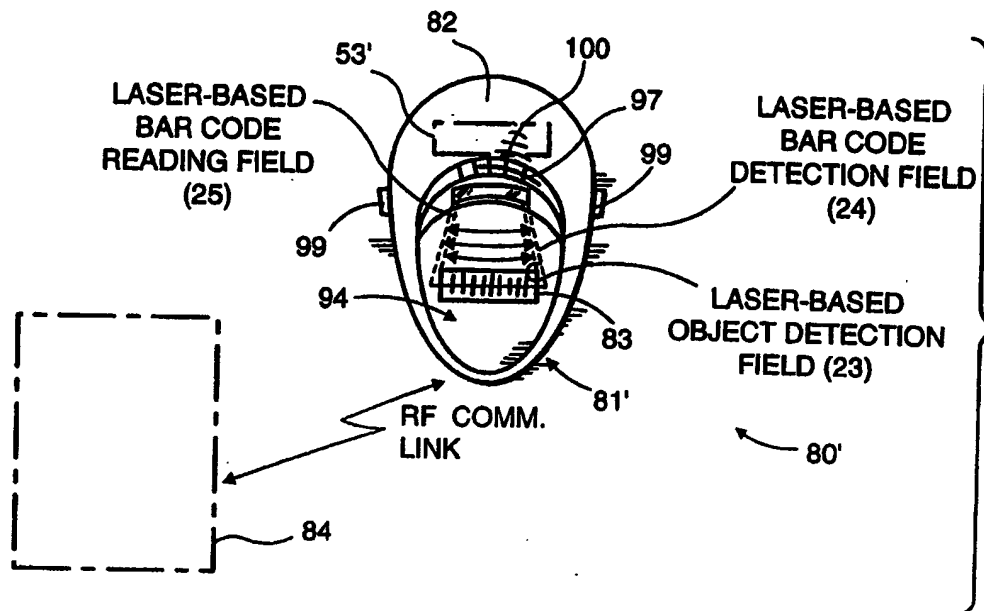


FIG. 4E

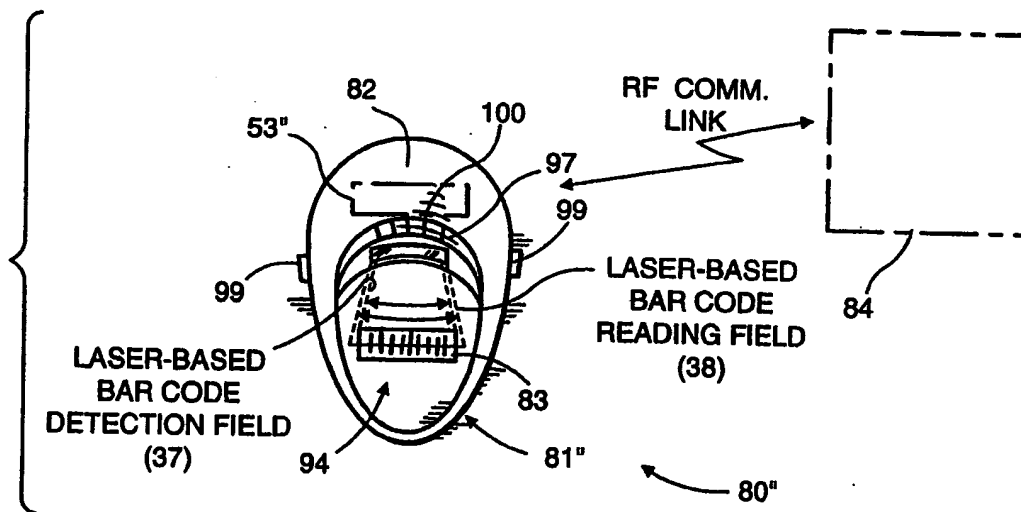


FIG. 4F

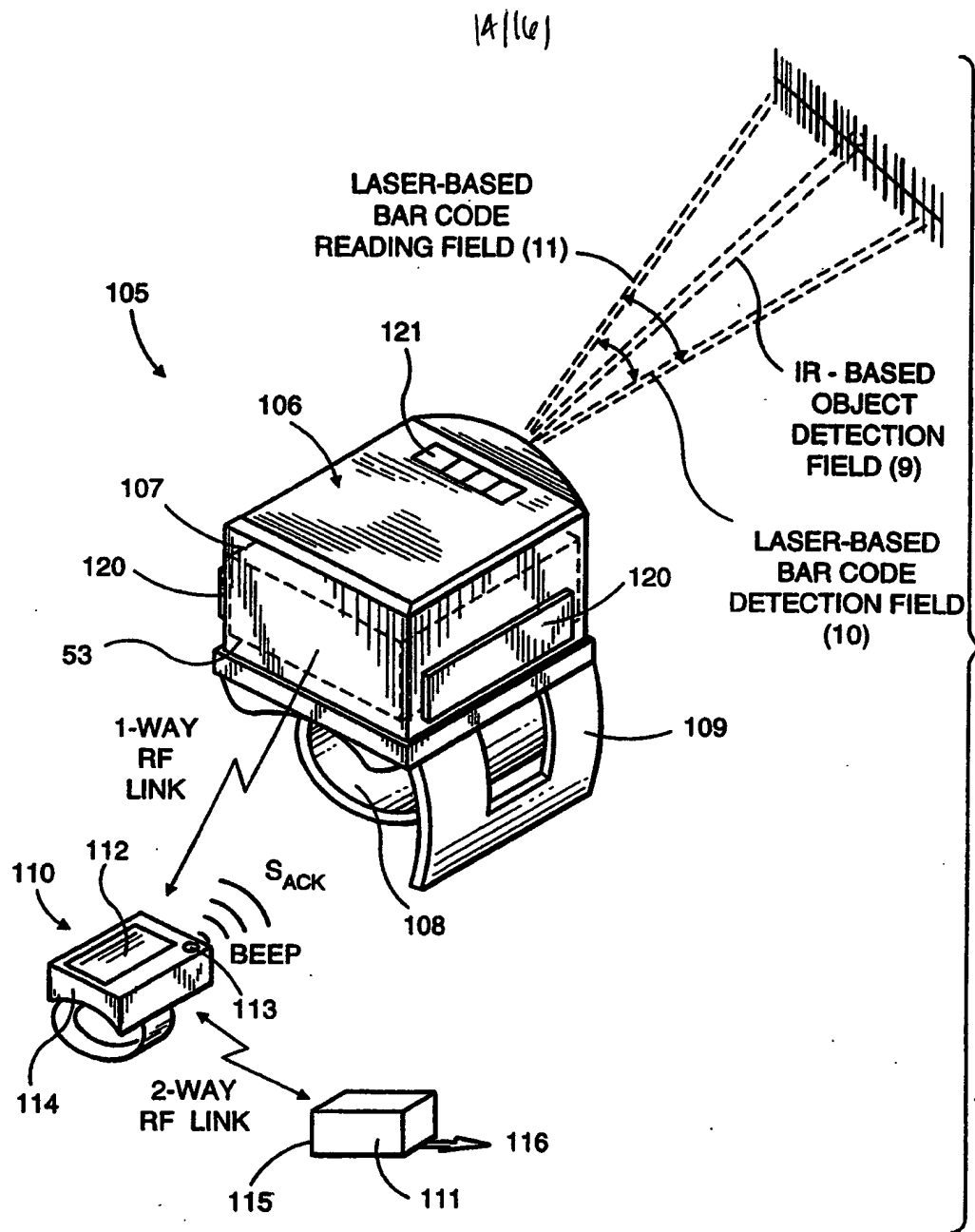


FIG. 5A

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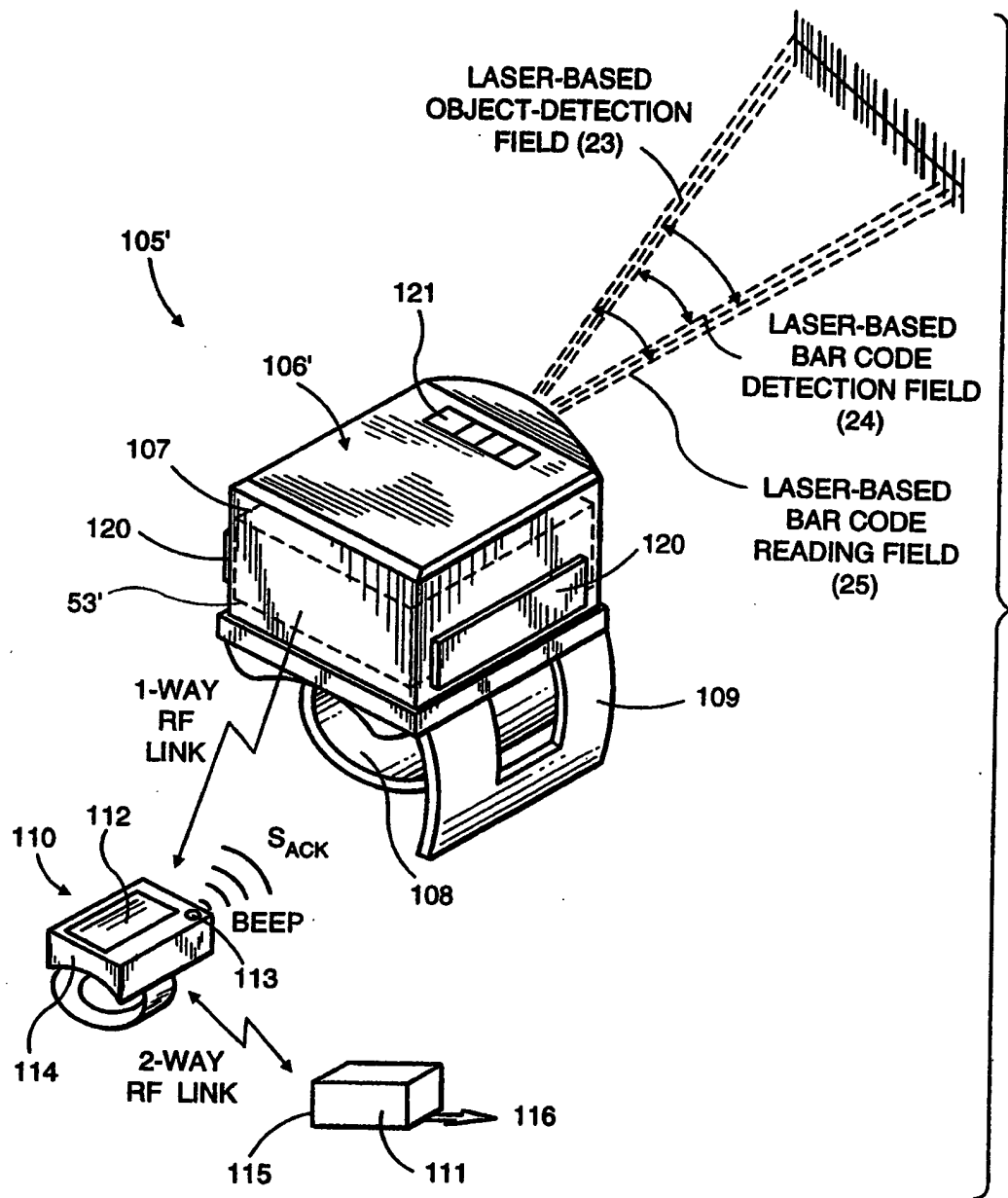


FIG. 5B

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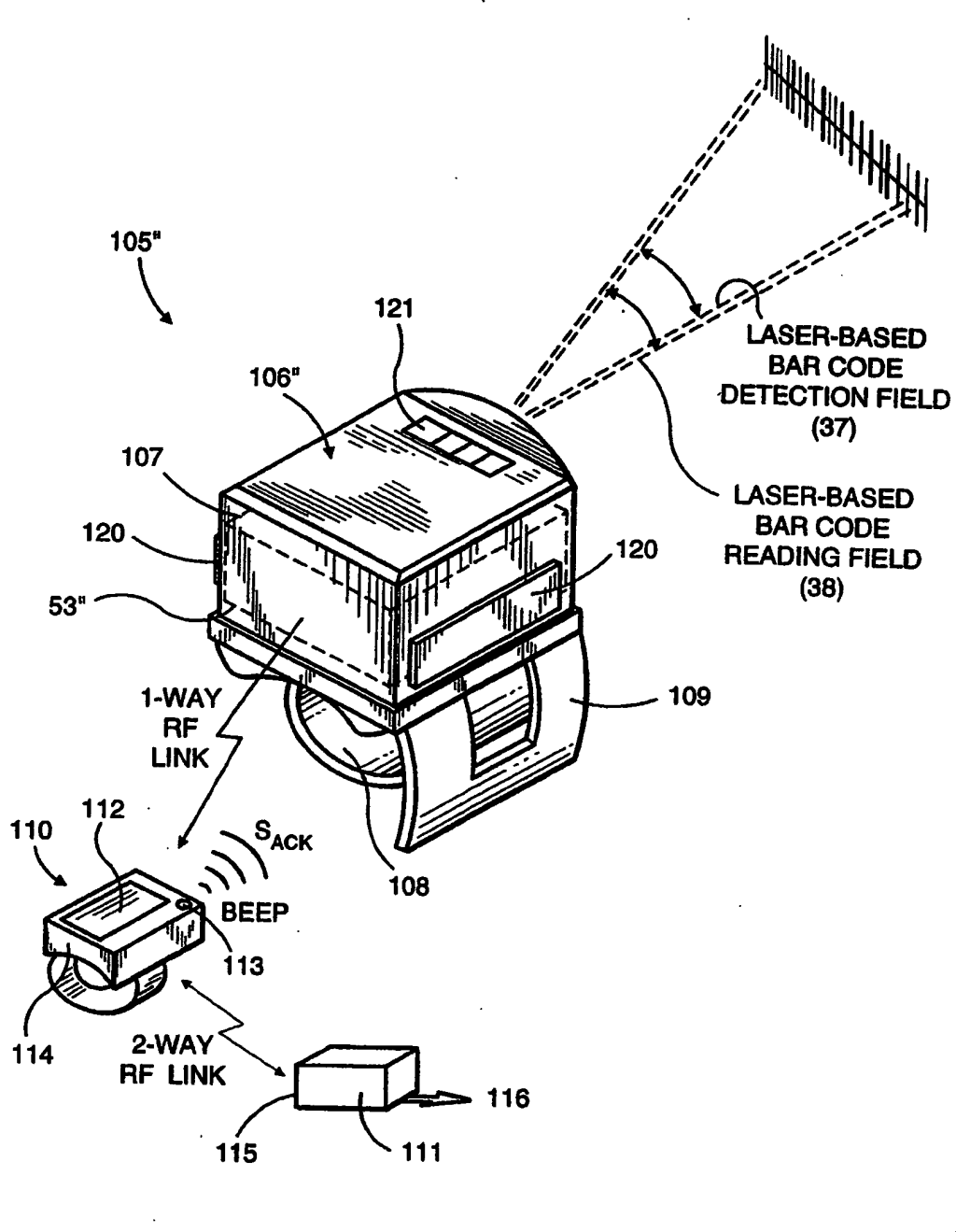


FIG. 5C



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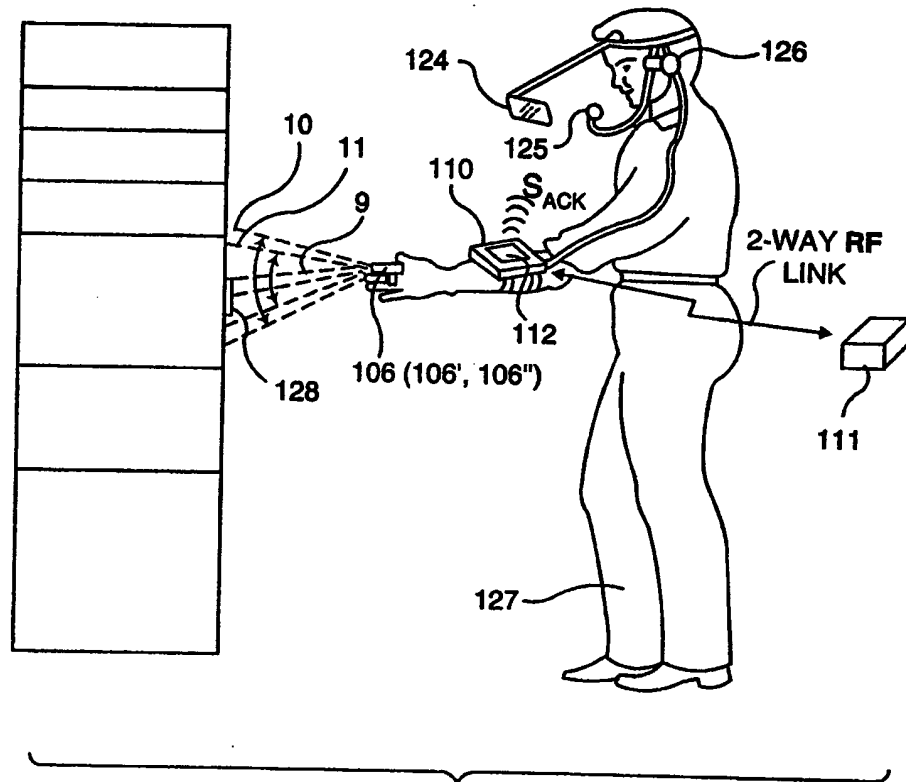
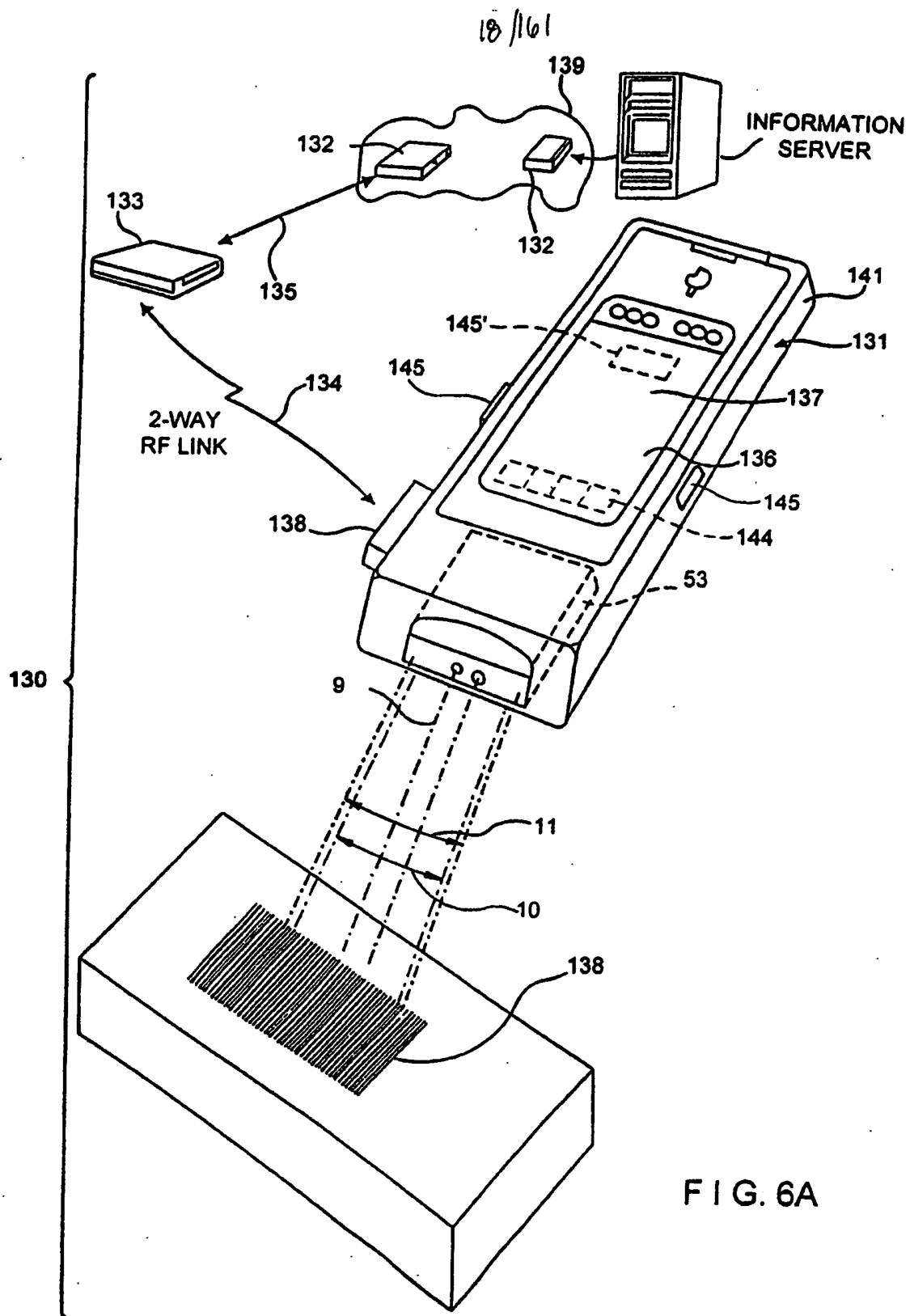
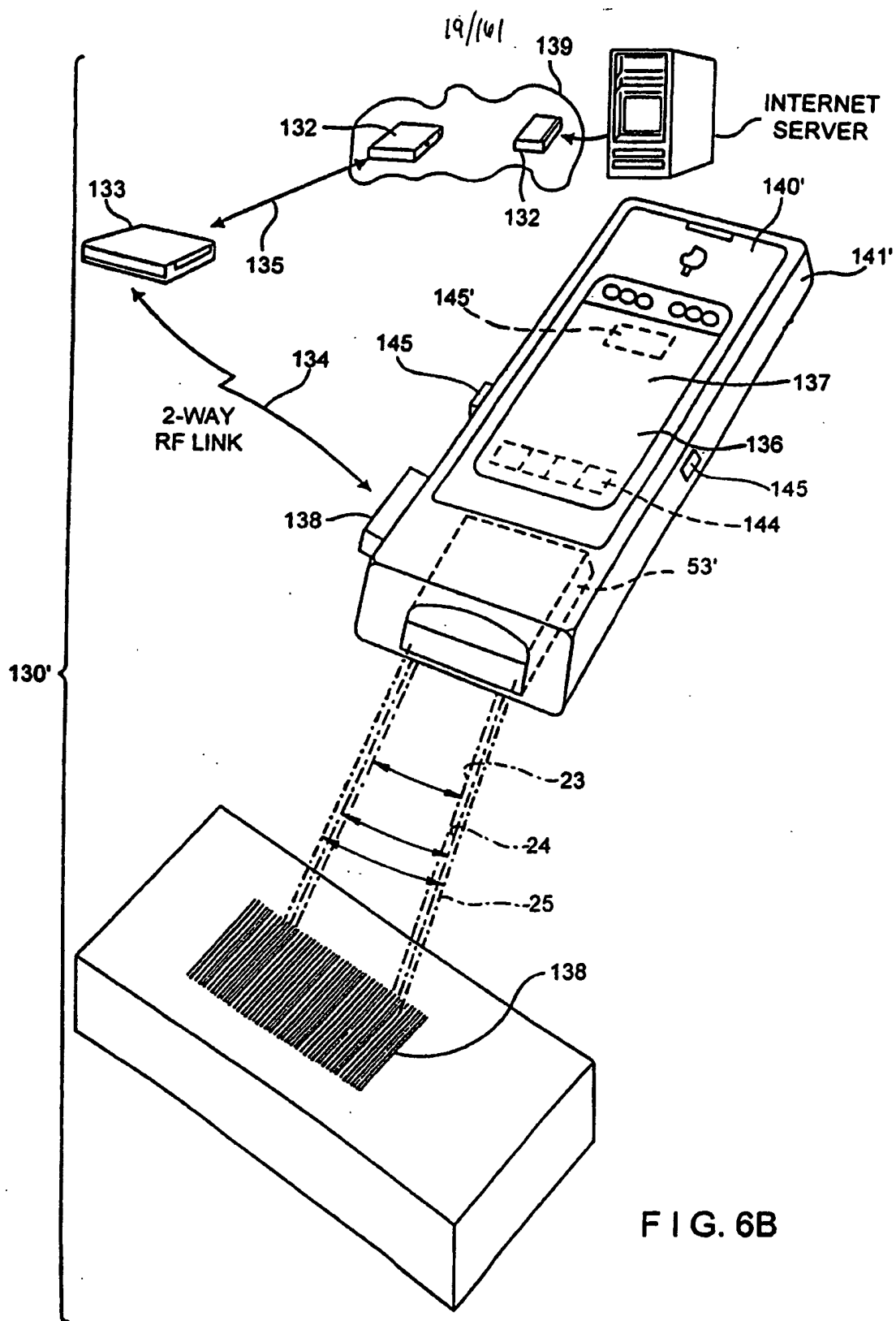


FIG. 5D





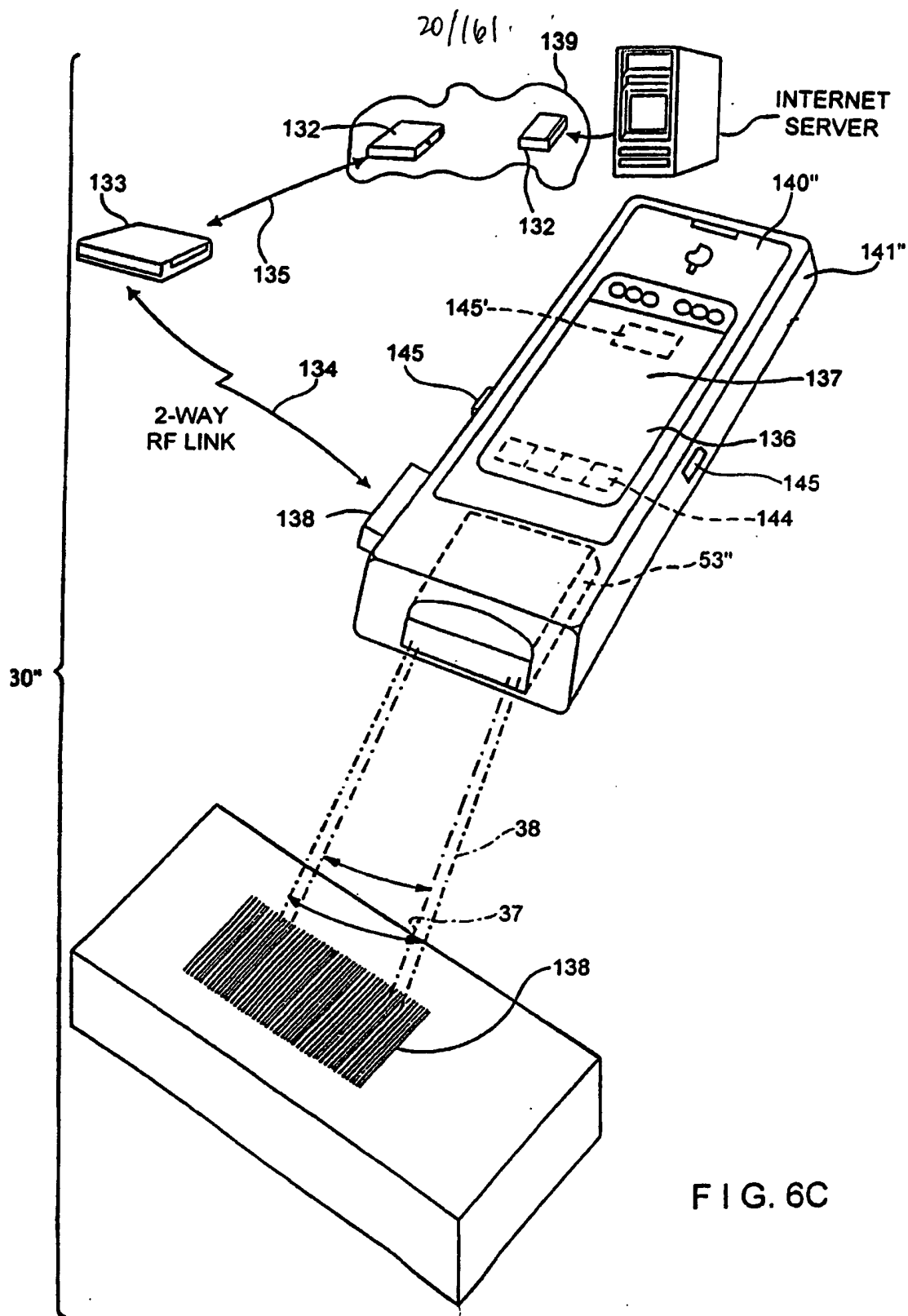


FIG. 6C

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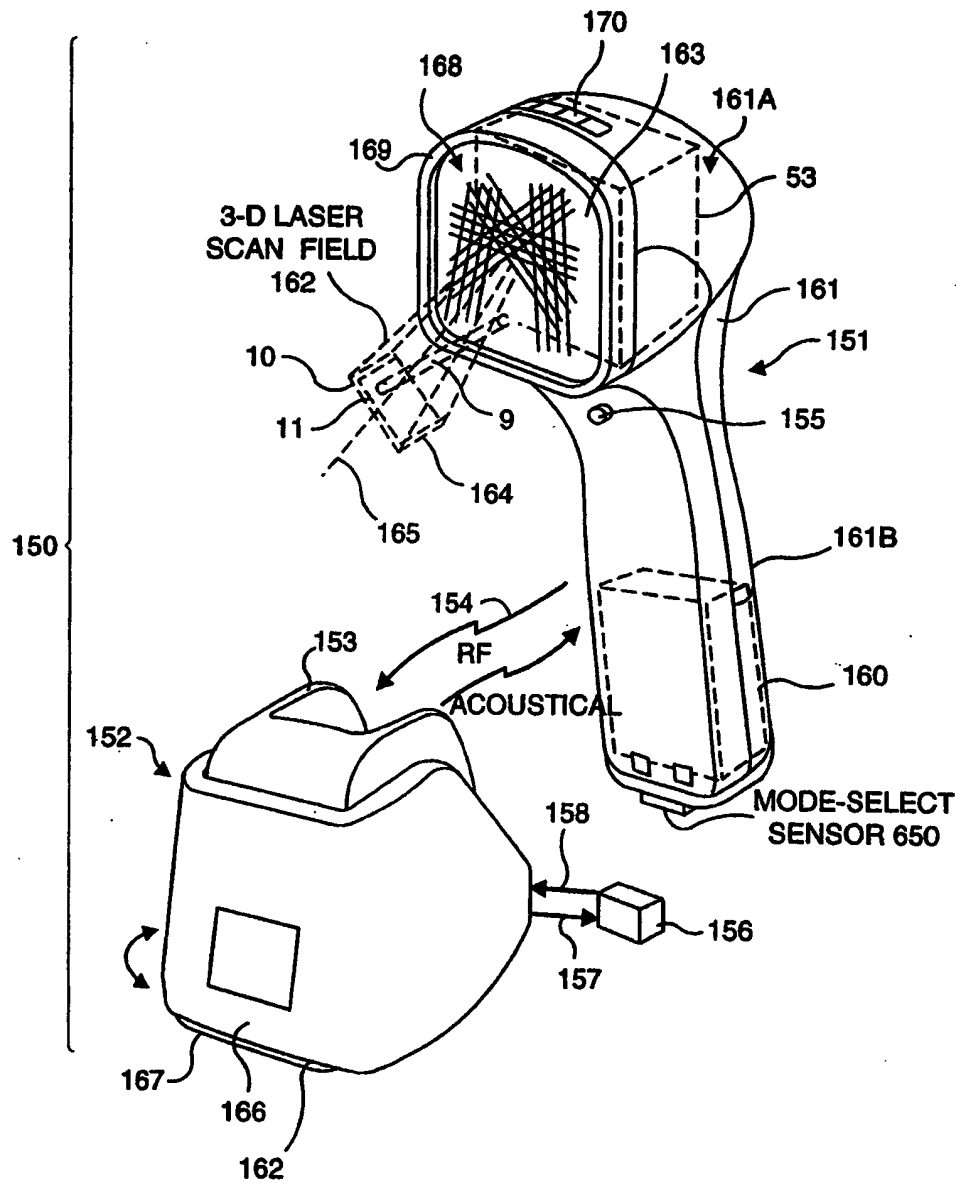


FIG. 7A

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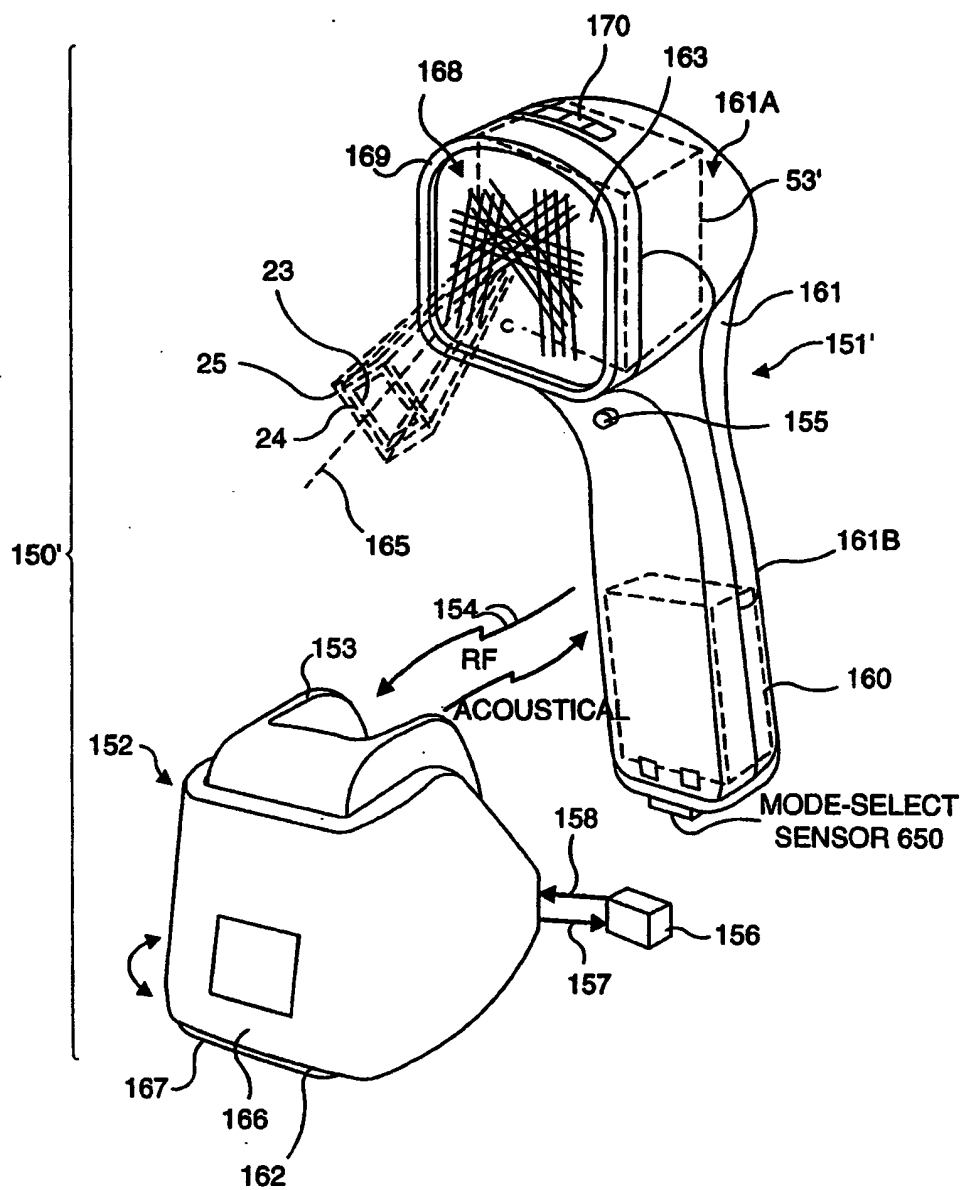


FIG. 7B

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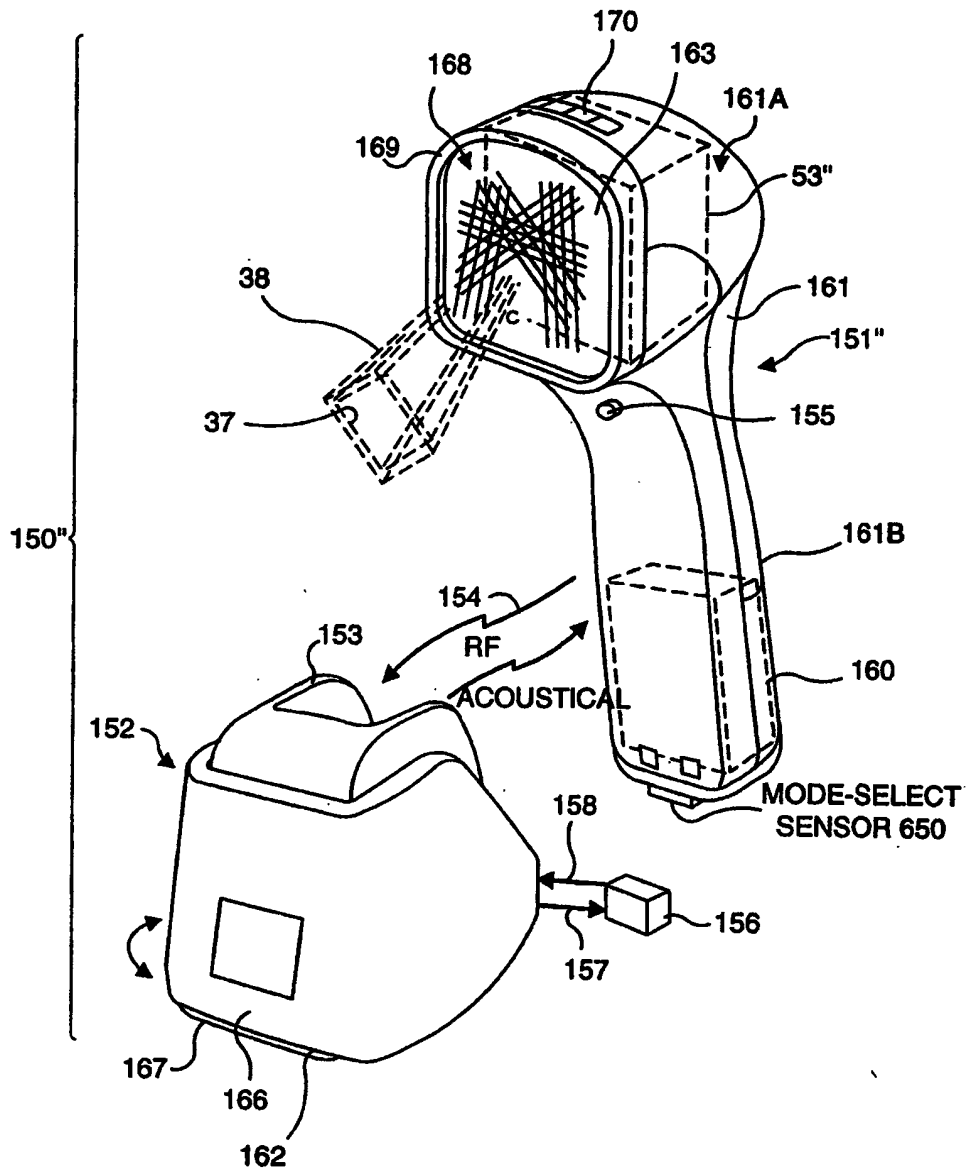


FIG. 7C

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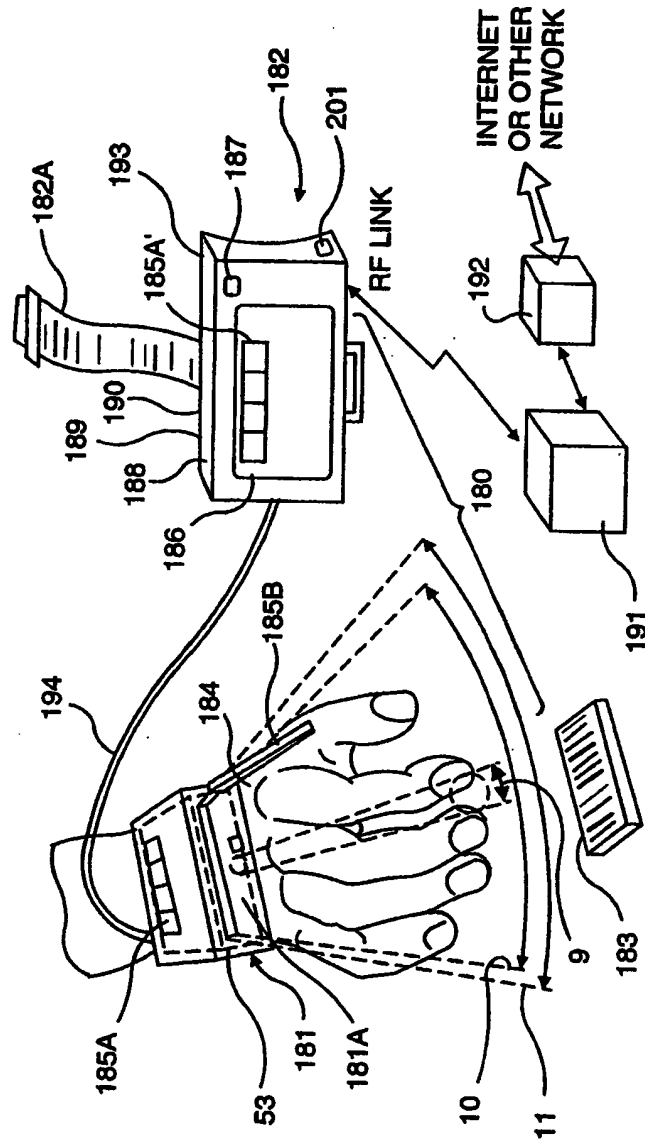


FIG. 8A



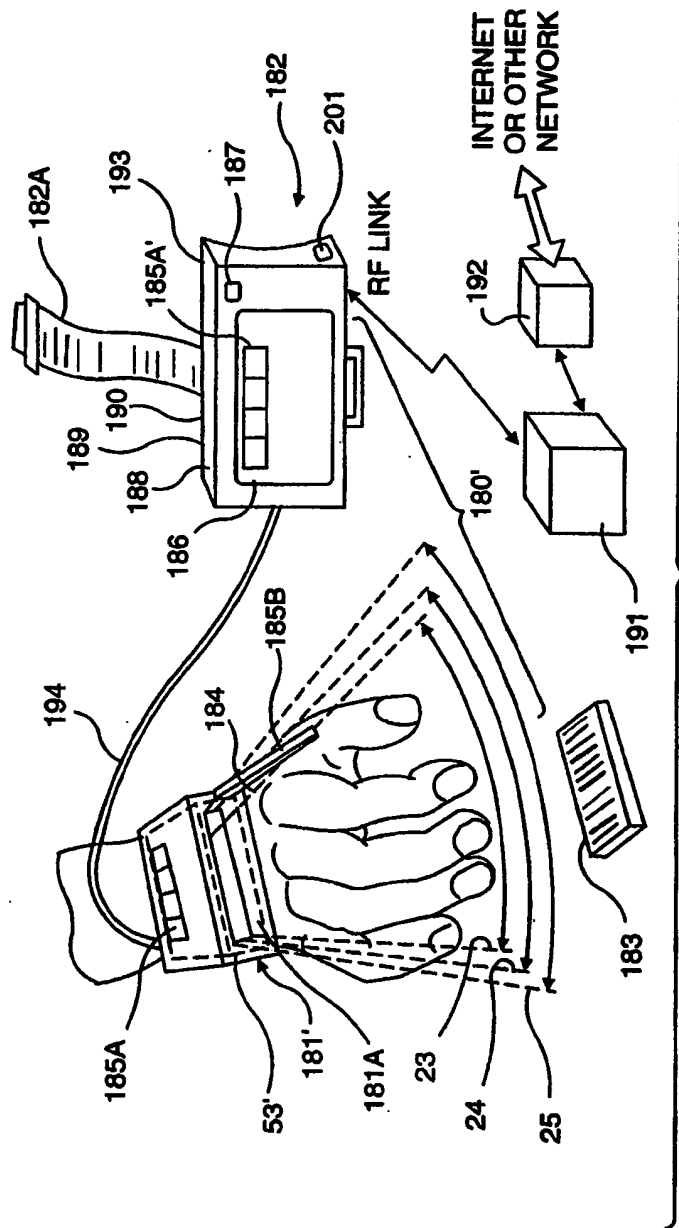


FIG. 8B

**FIG. 8C**

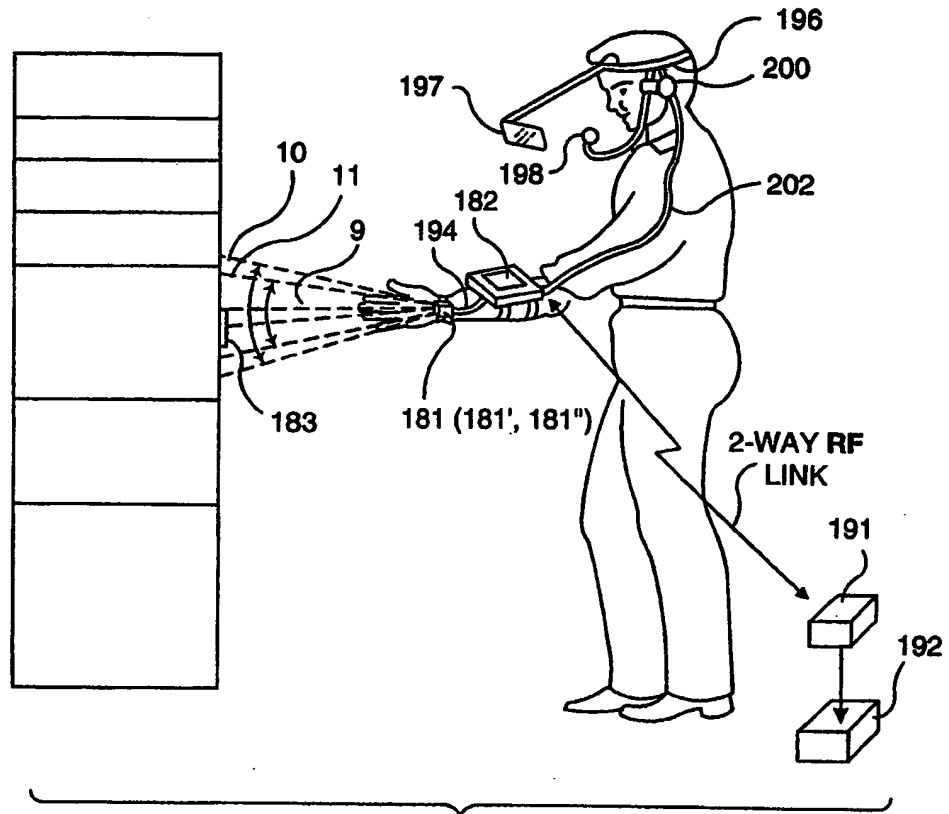
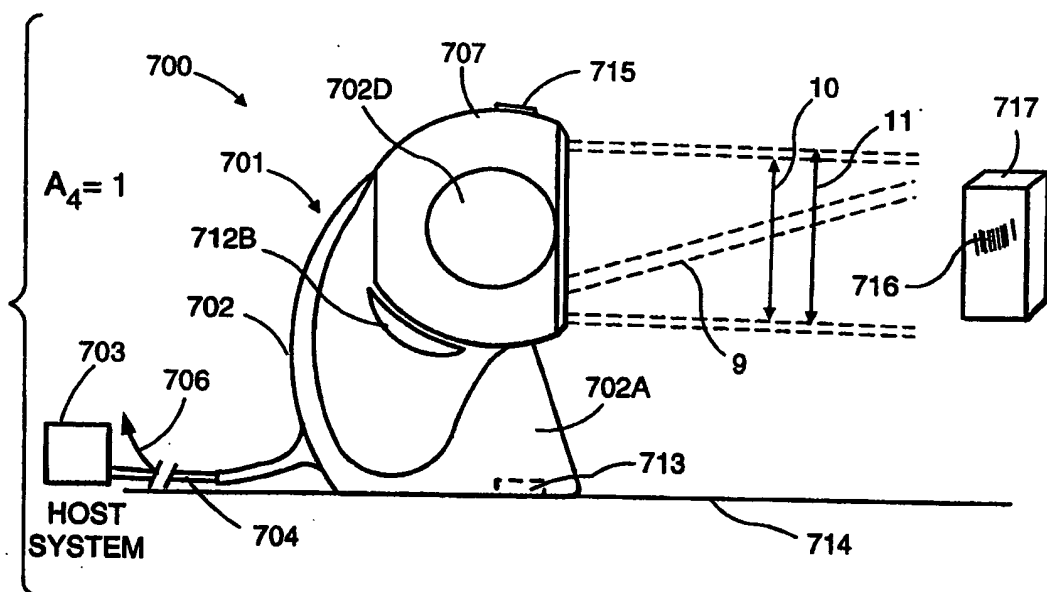
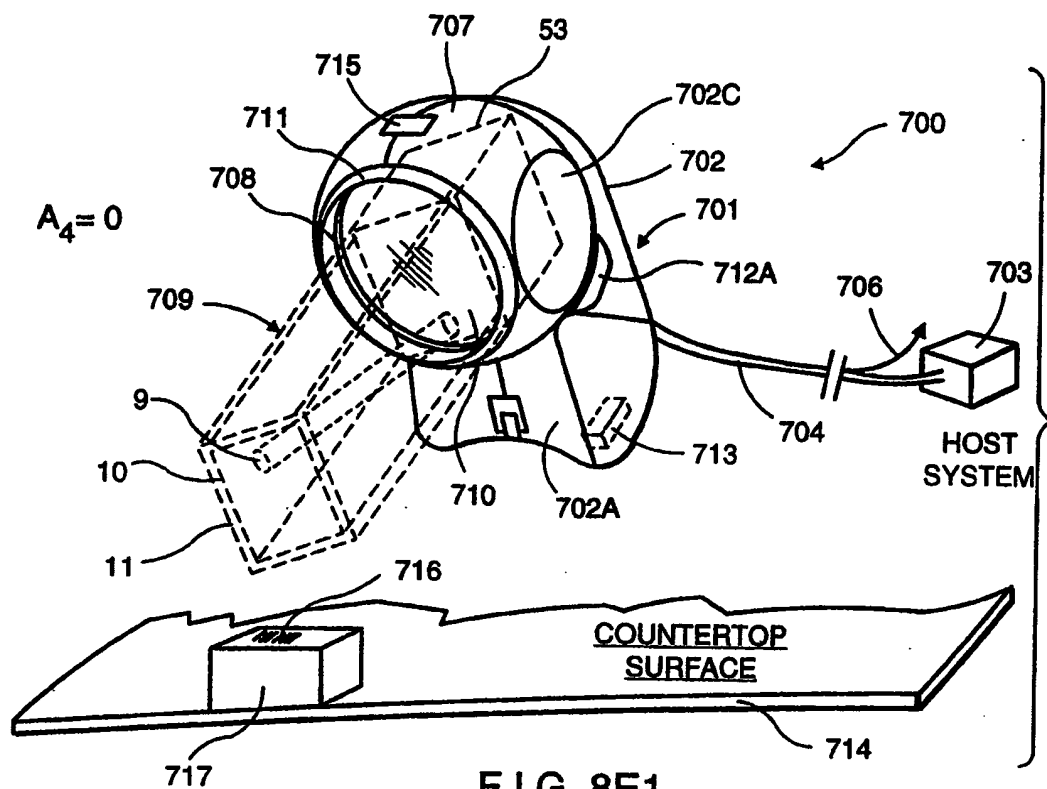


FIG. 8D

$$A_4 = 0$$


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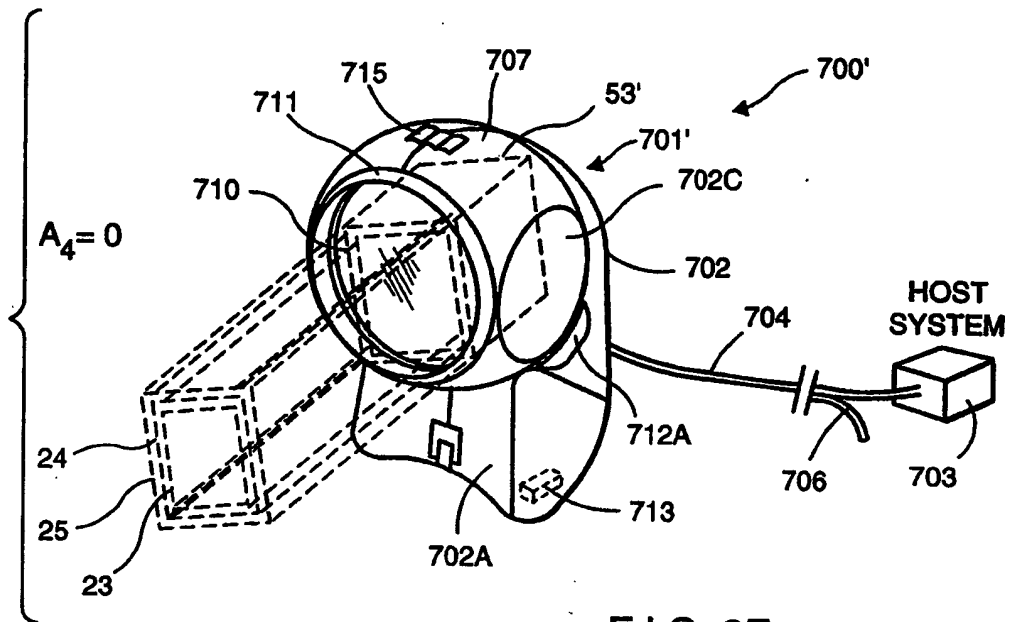


FIG. 8F

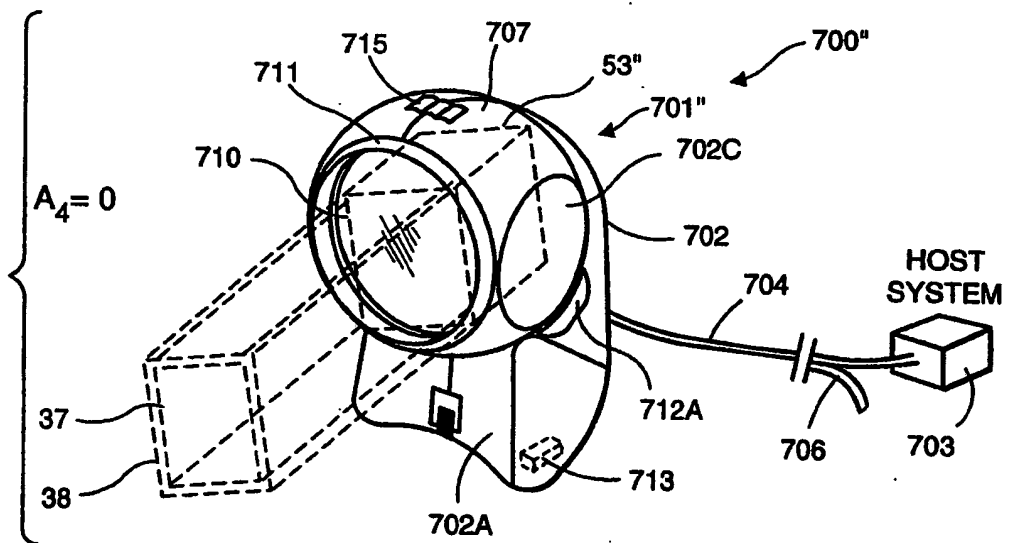


FIG. 8G

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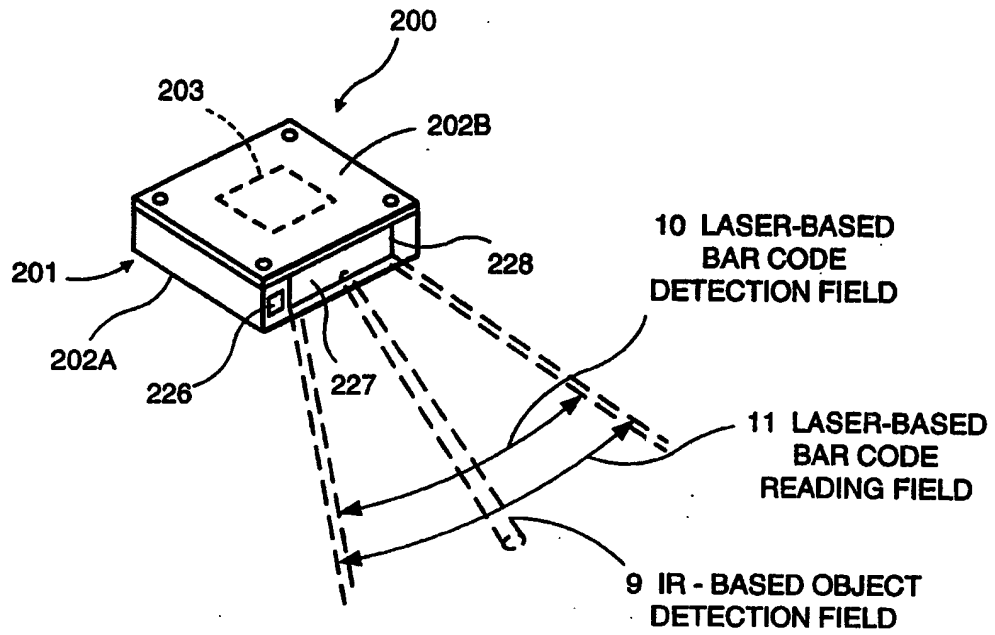


FIG. 9A

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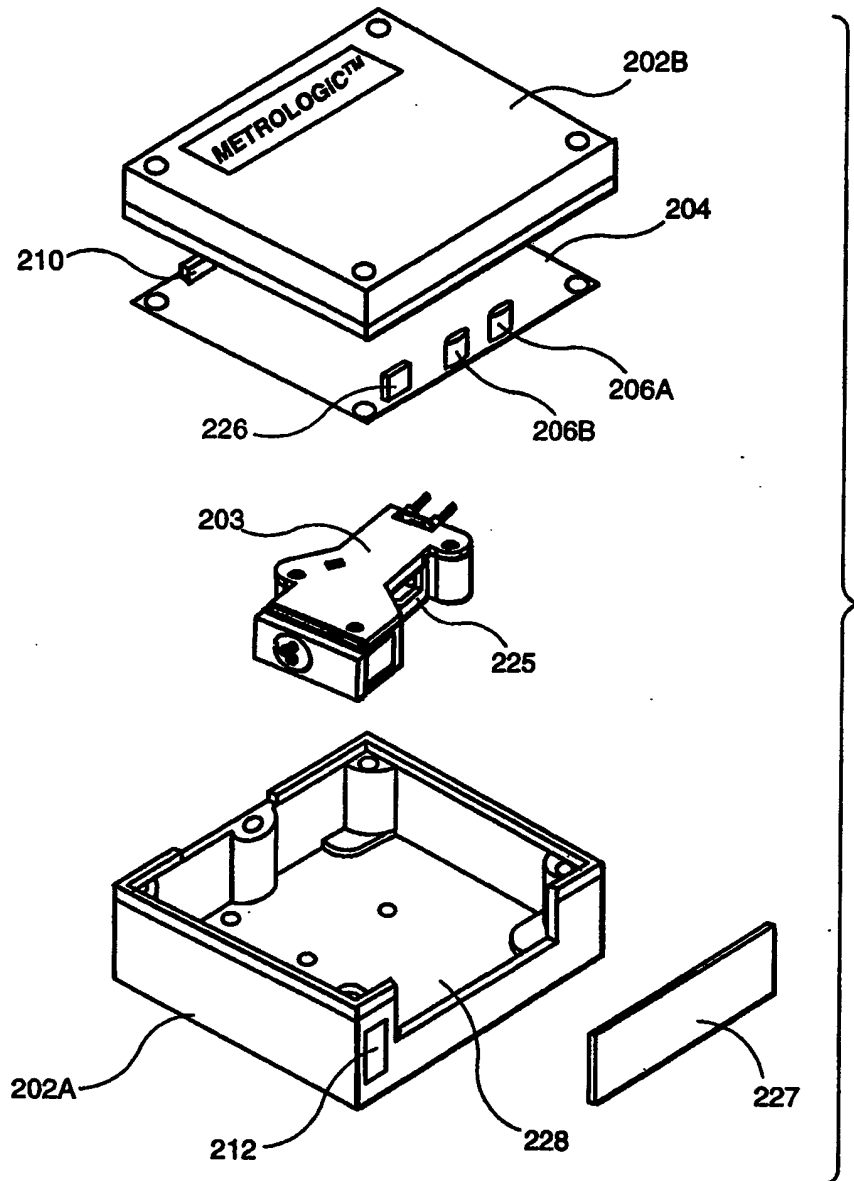


FIG. 9B

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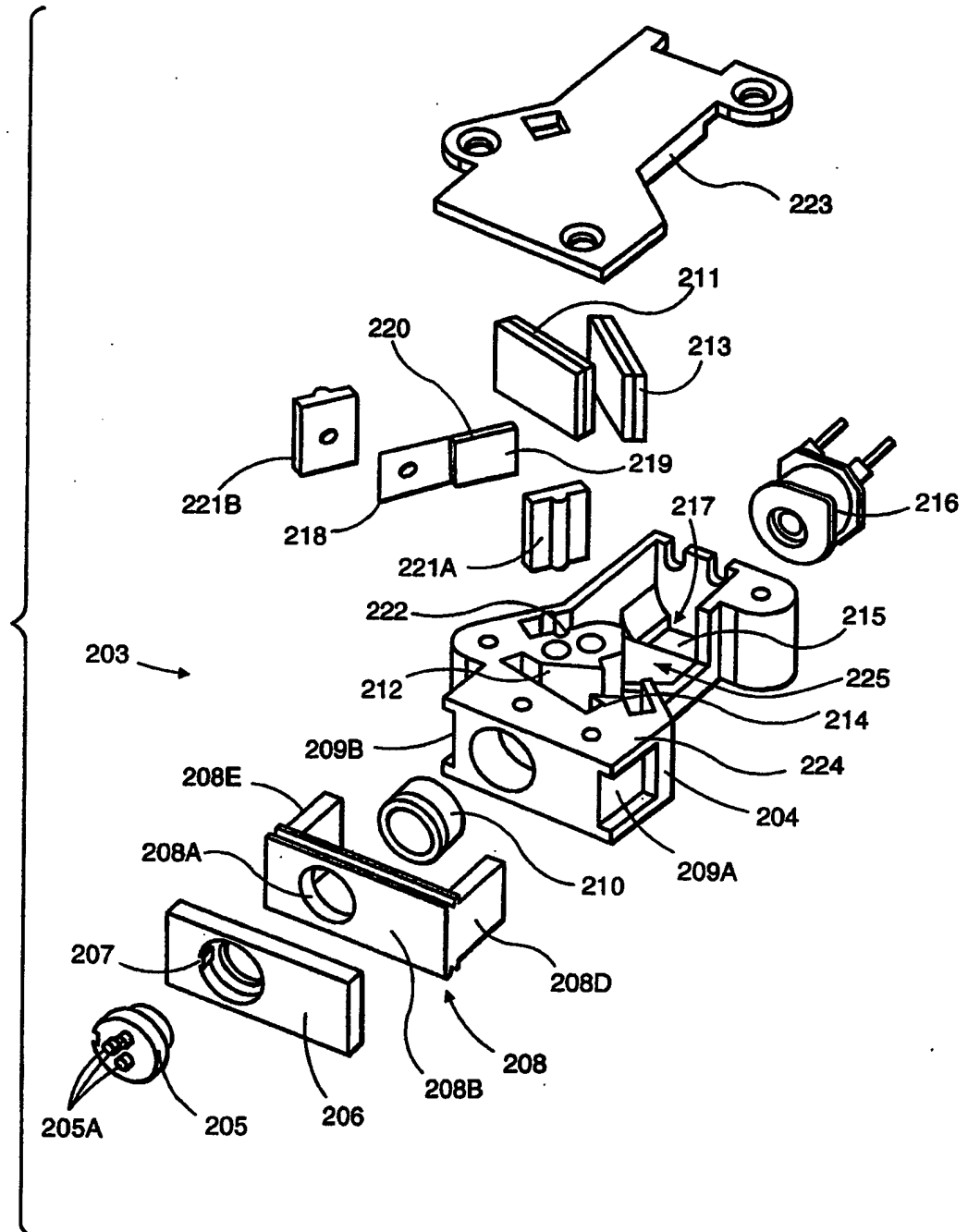


FIG. 9C



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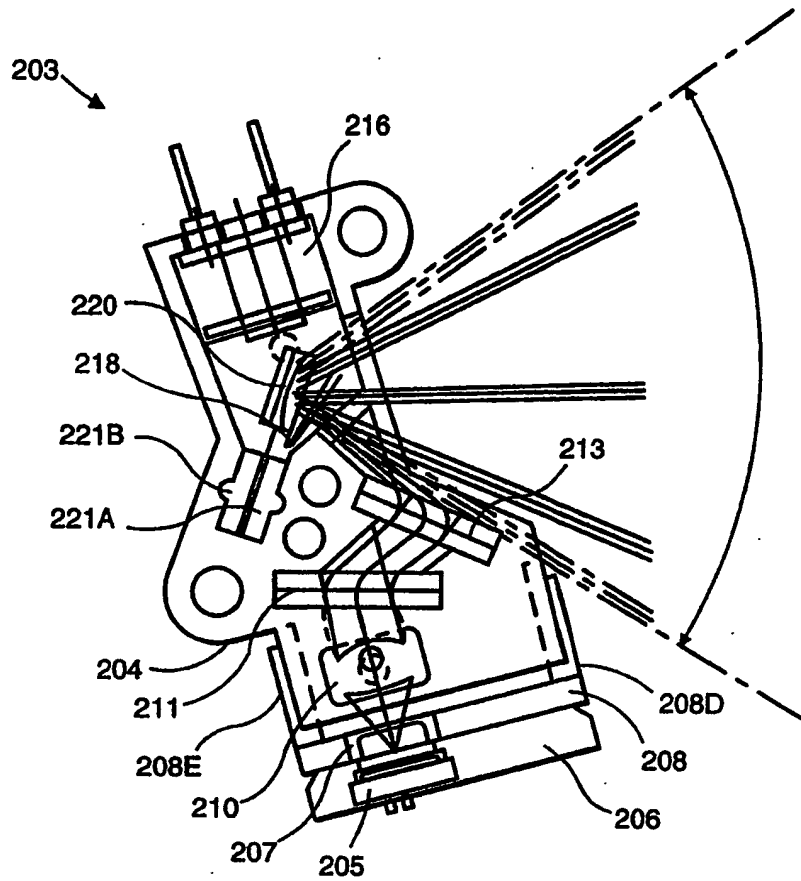


FIG. 9D

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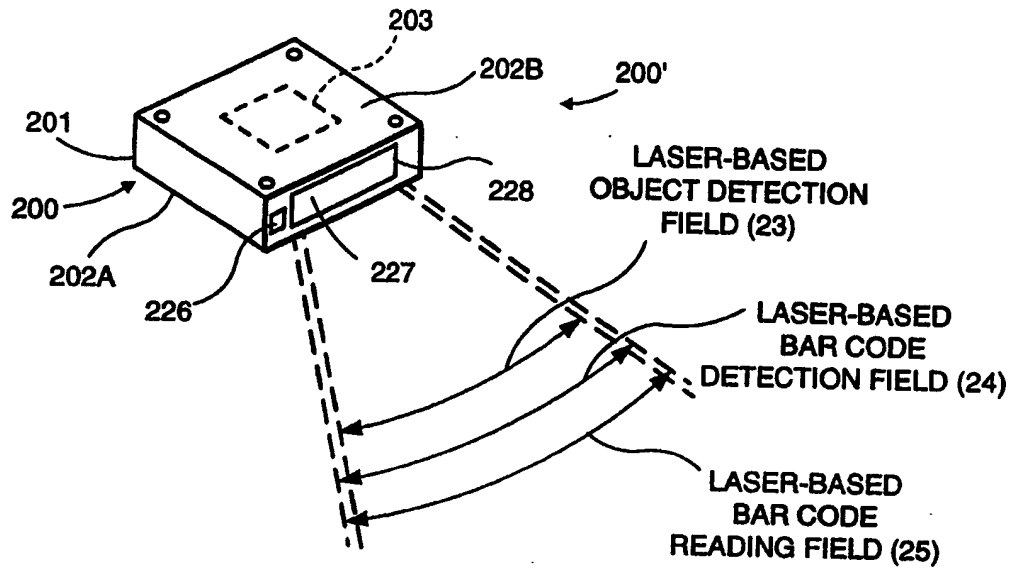


FIG. 9E

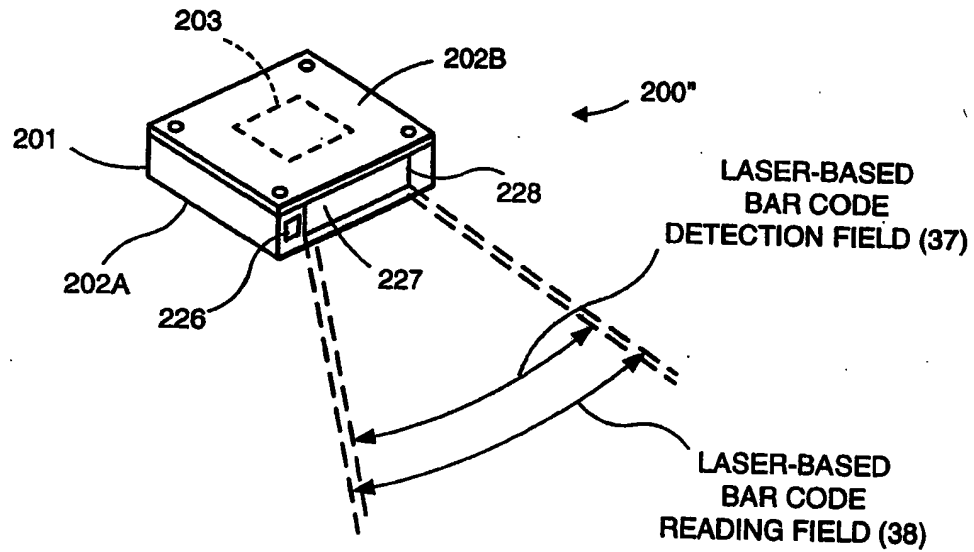


FIG. 9F

FIG. 10A

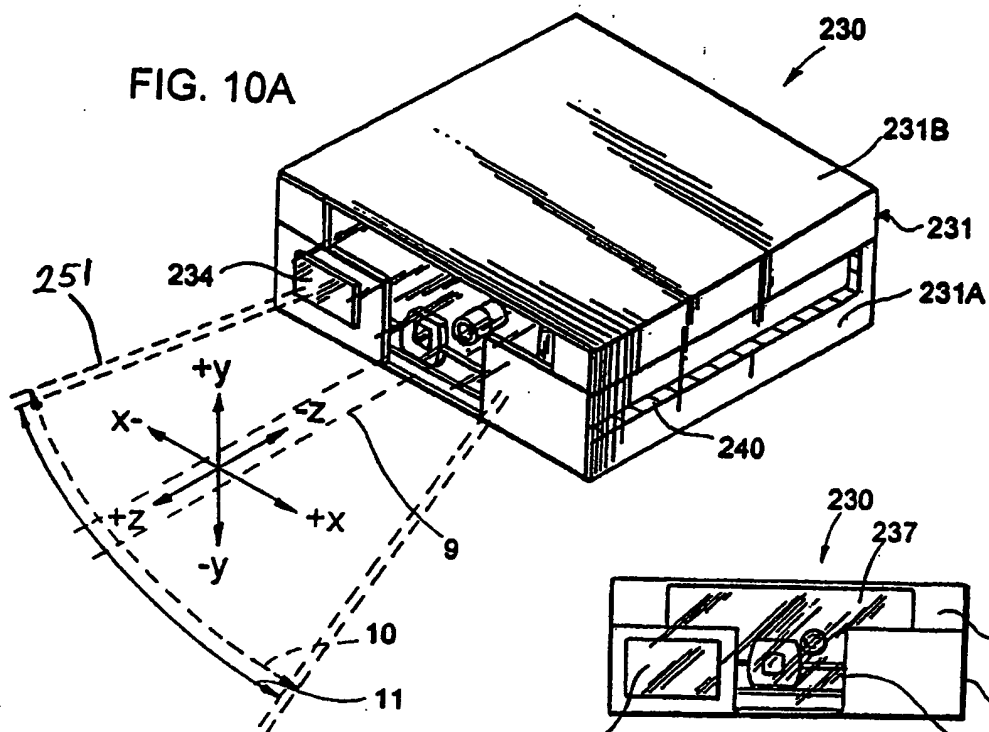


FIG. 10B

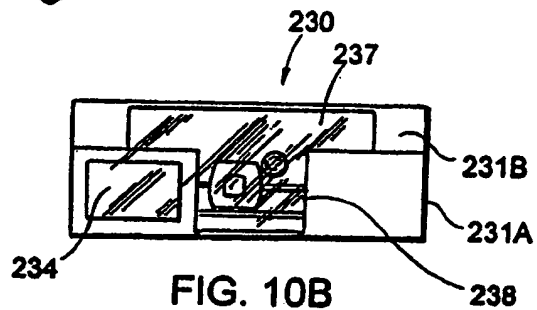


FIG. 10C

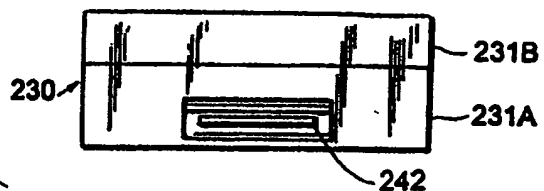
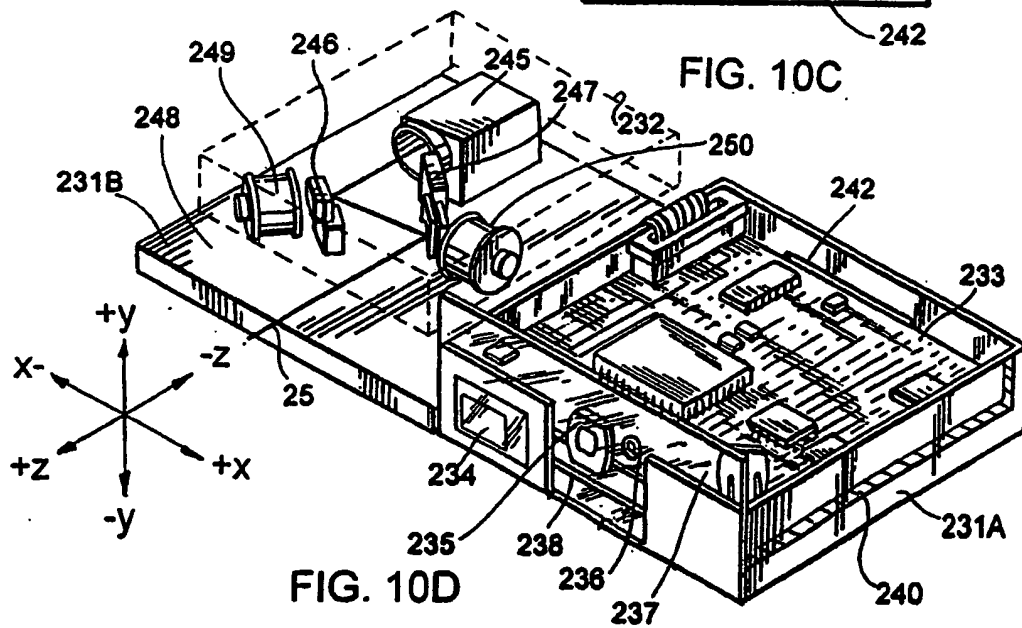


FIG. 10D



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FIG. 10E

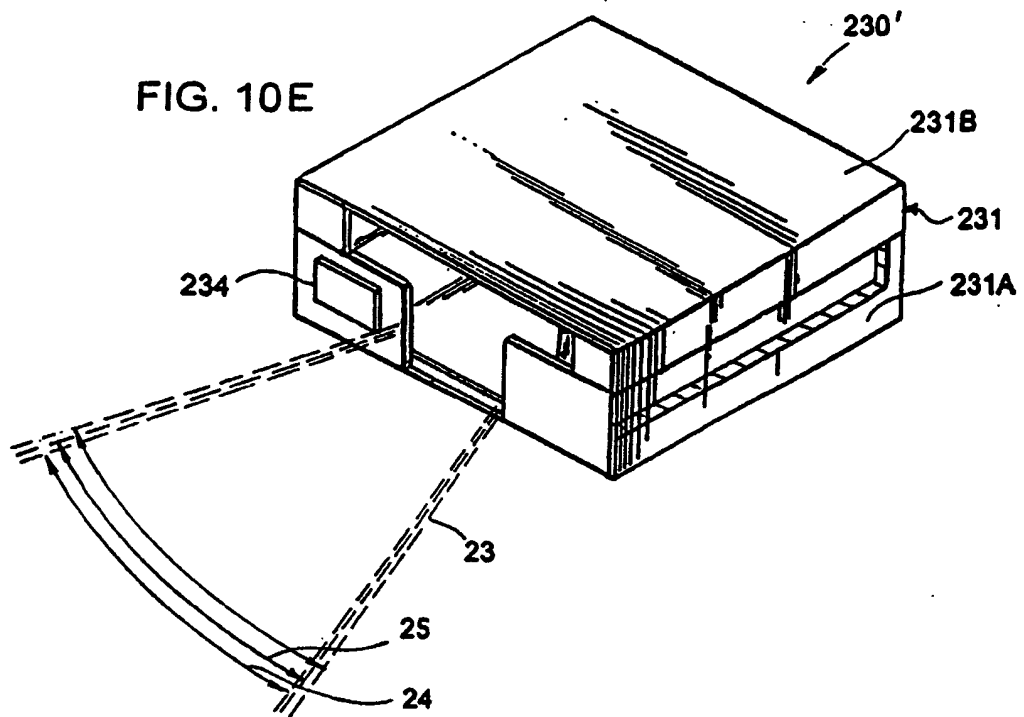
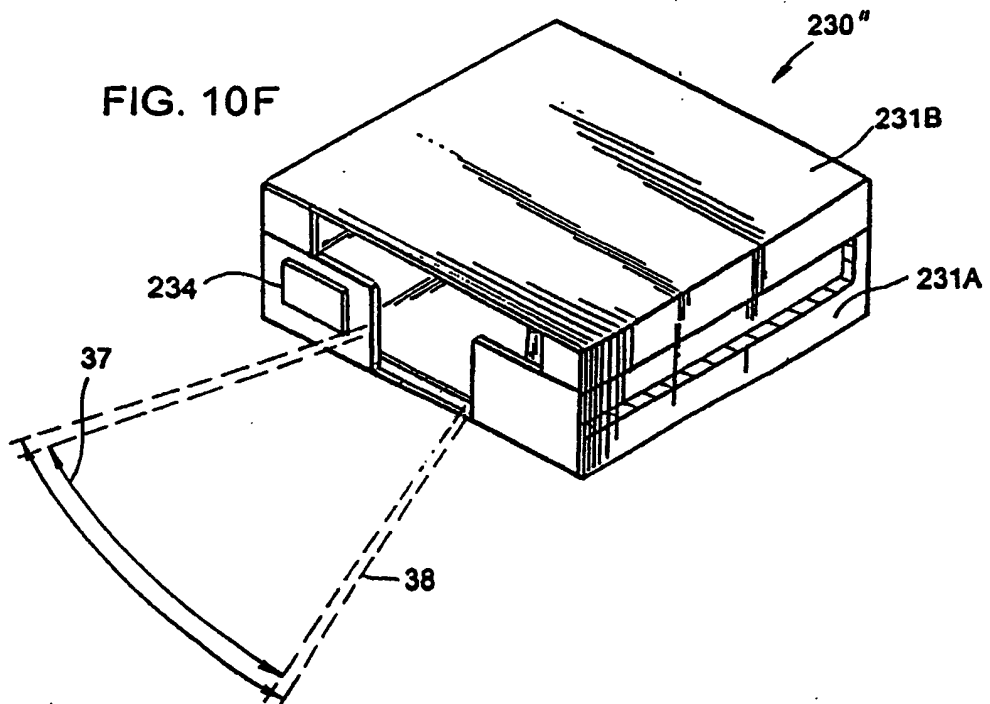


FIG. 10F



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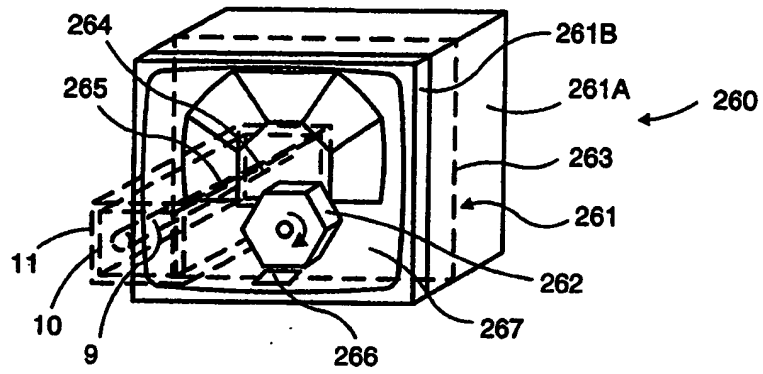


FIG. 11A

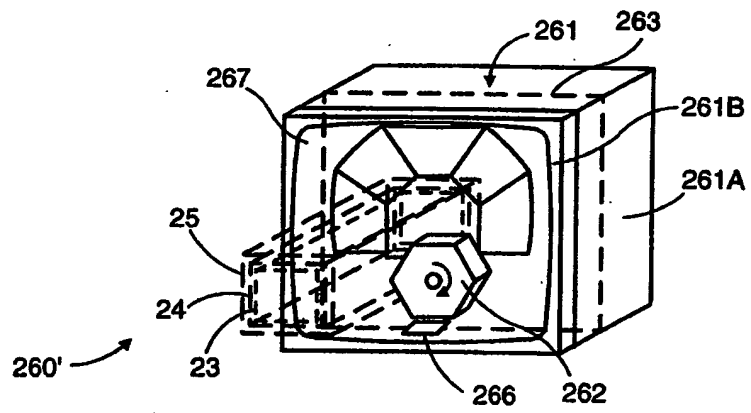


FIG. 11B

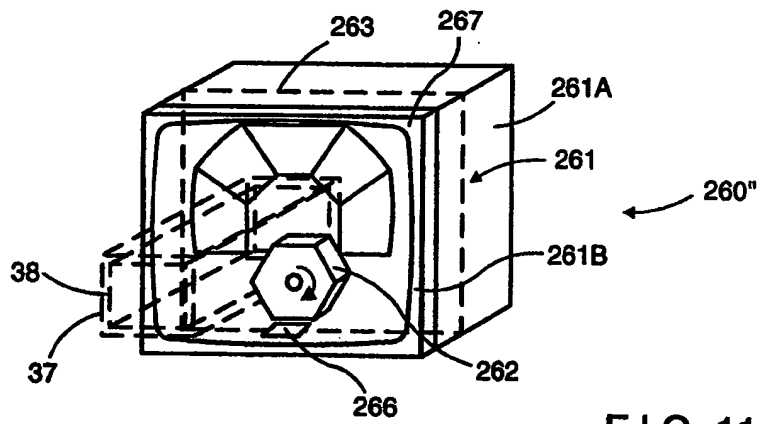


FIG. 11C

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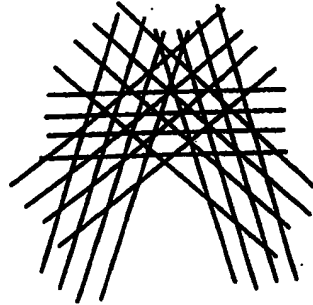


FIG. 12A

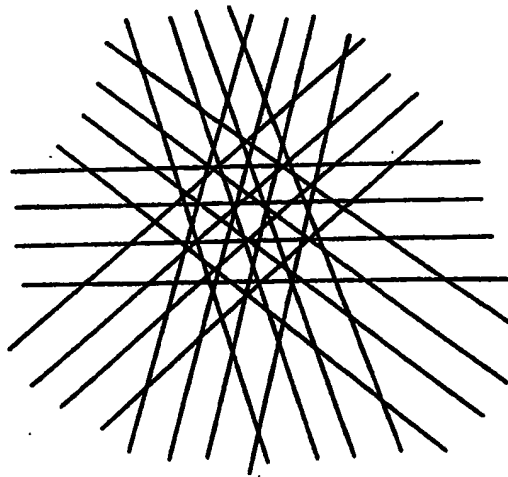


FIG. 12B

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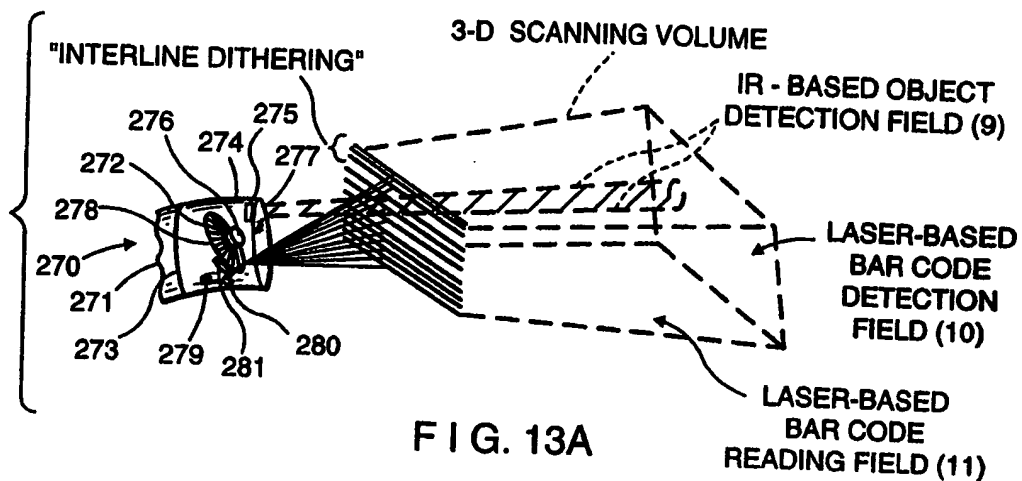


FIG. 13A

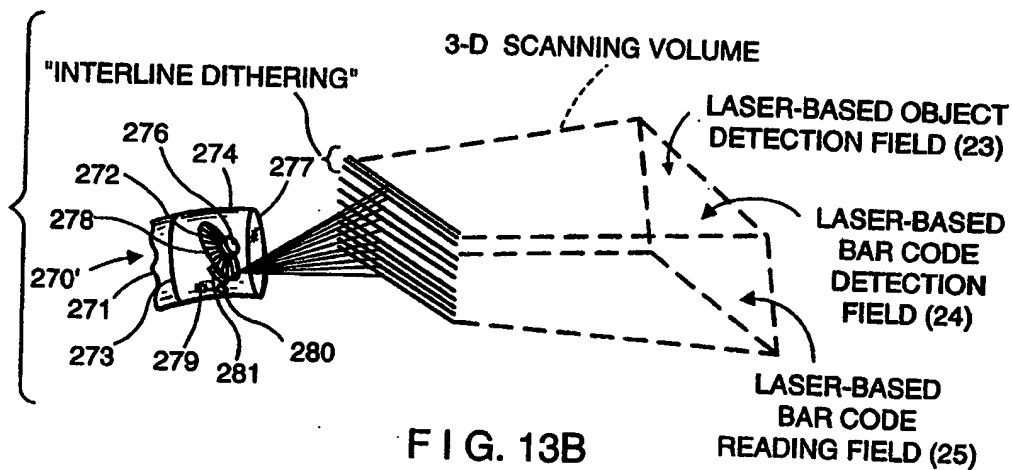


FIG. 13B

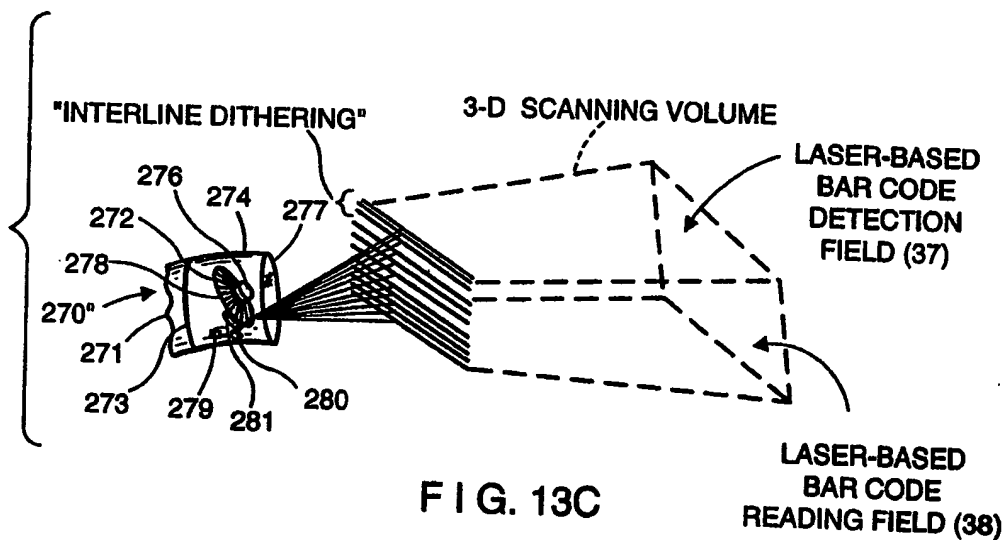


FIG. 13C

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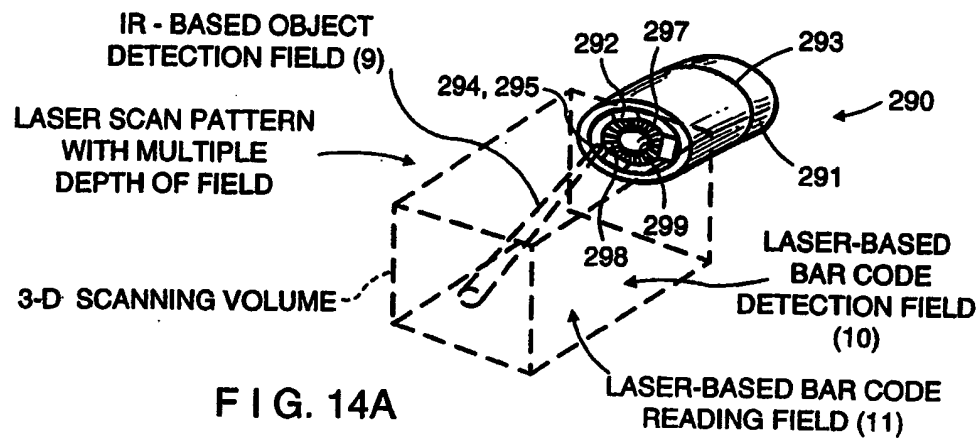


FIG. 14A

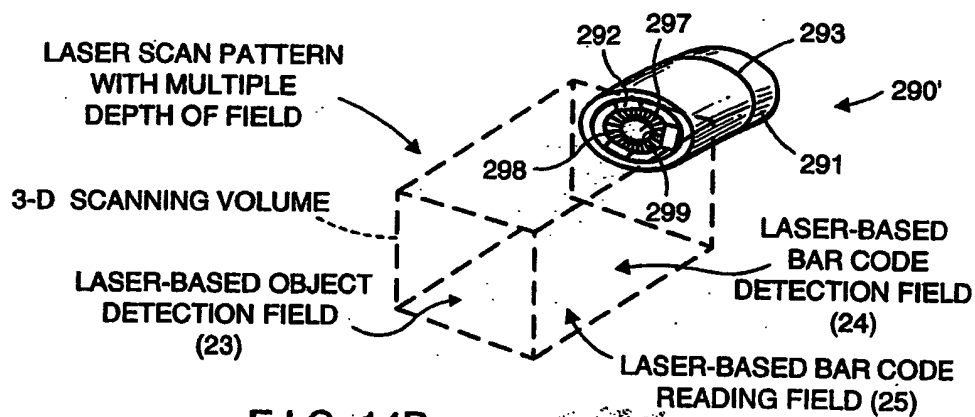


FIG. 14B

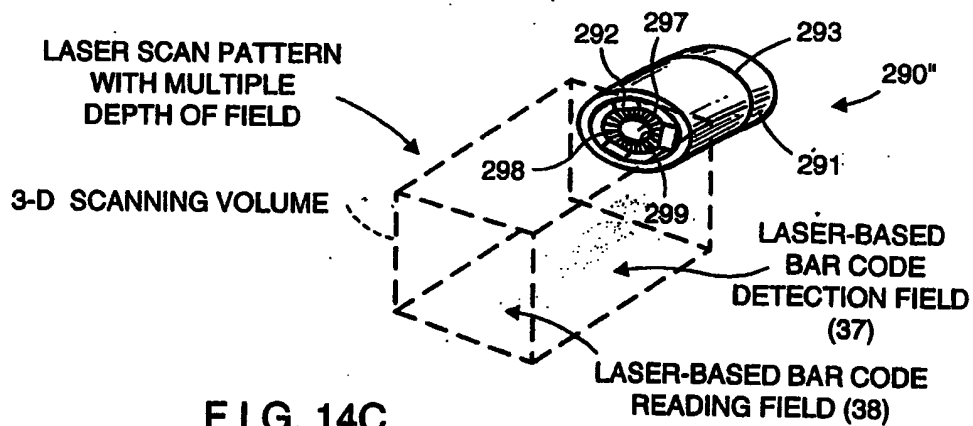


FIG. 14C



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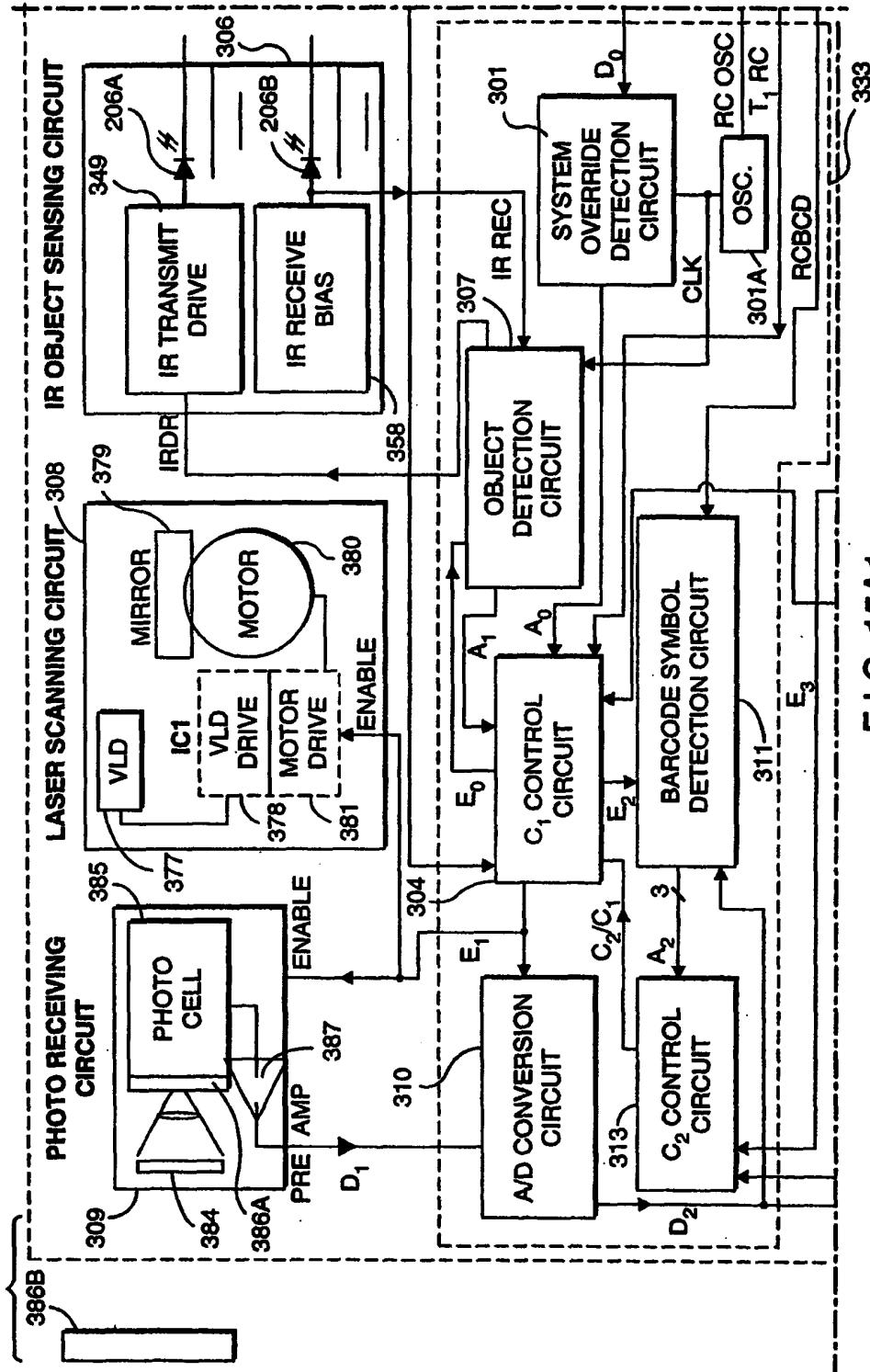


FIG. 15A1

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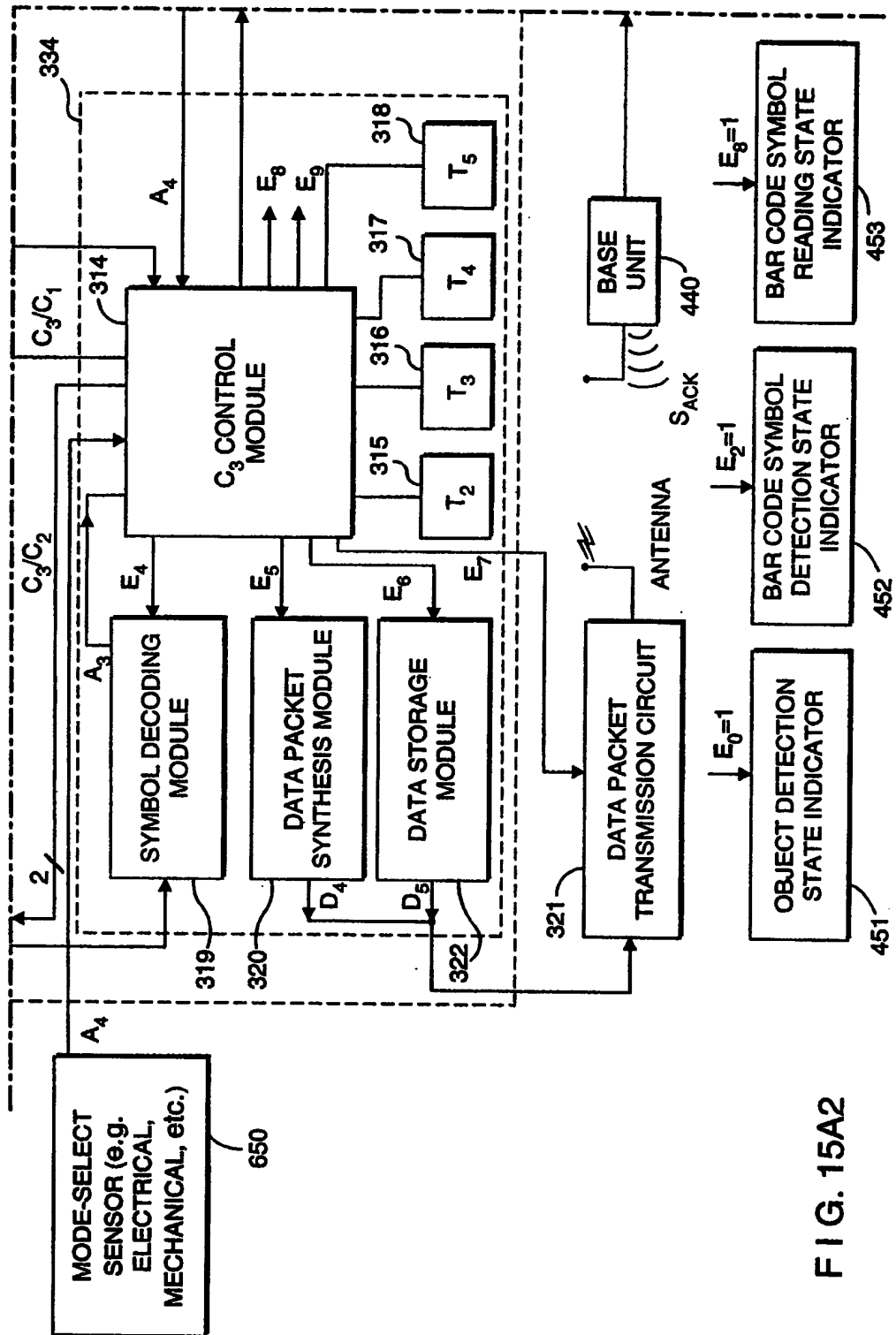


FIG. 15A2

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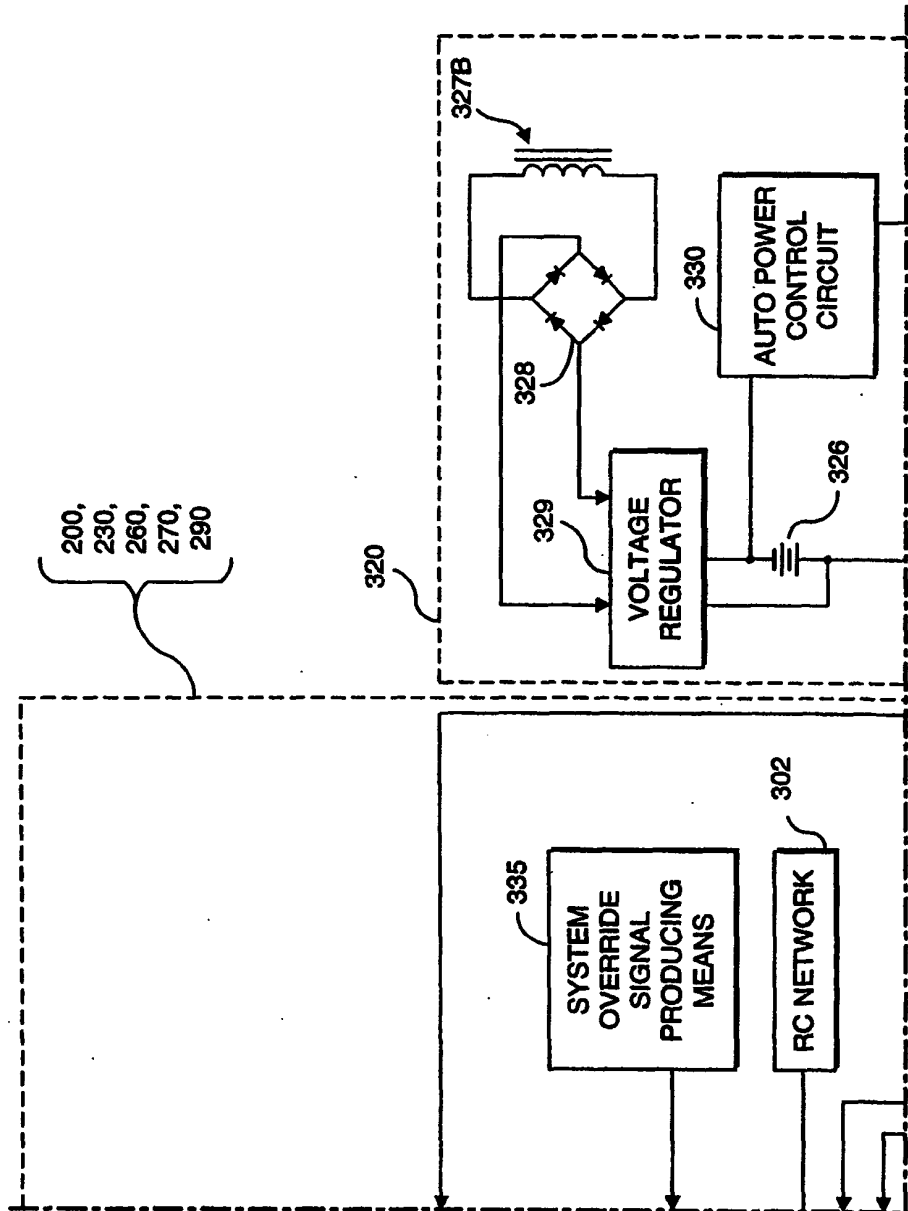


FIG. 15A3

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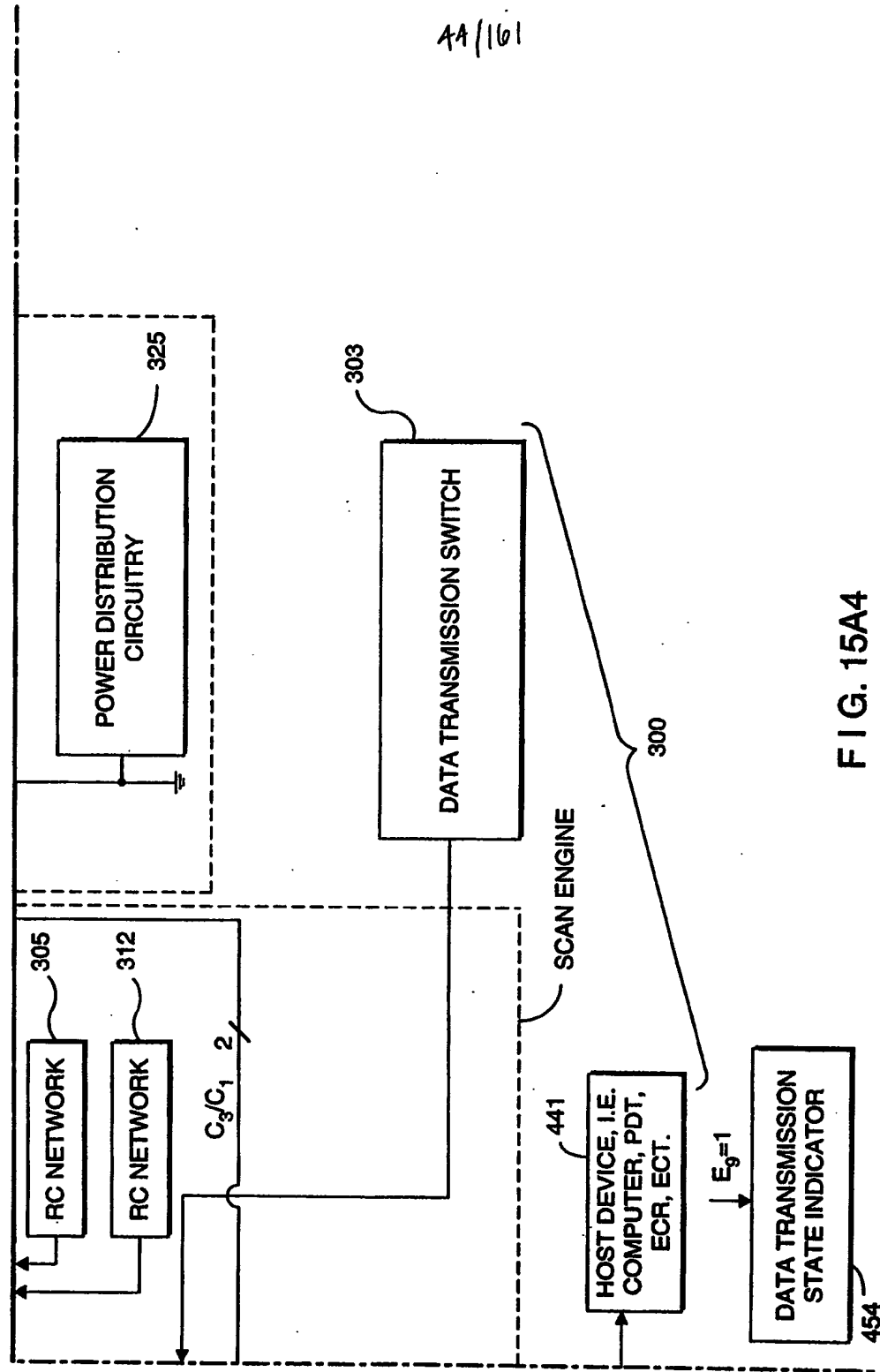


FIG. 15A4

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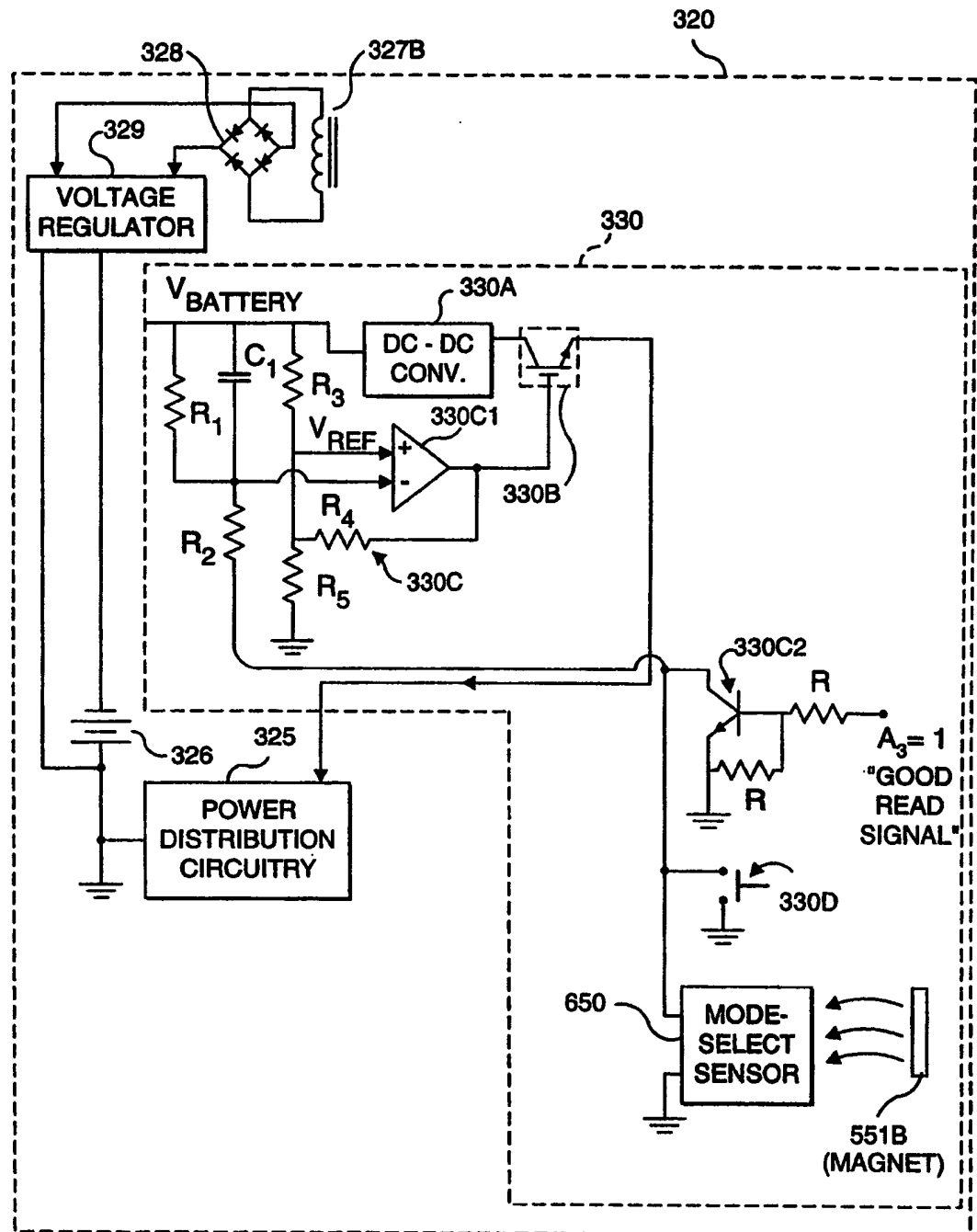


FIG. 15B1

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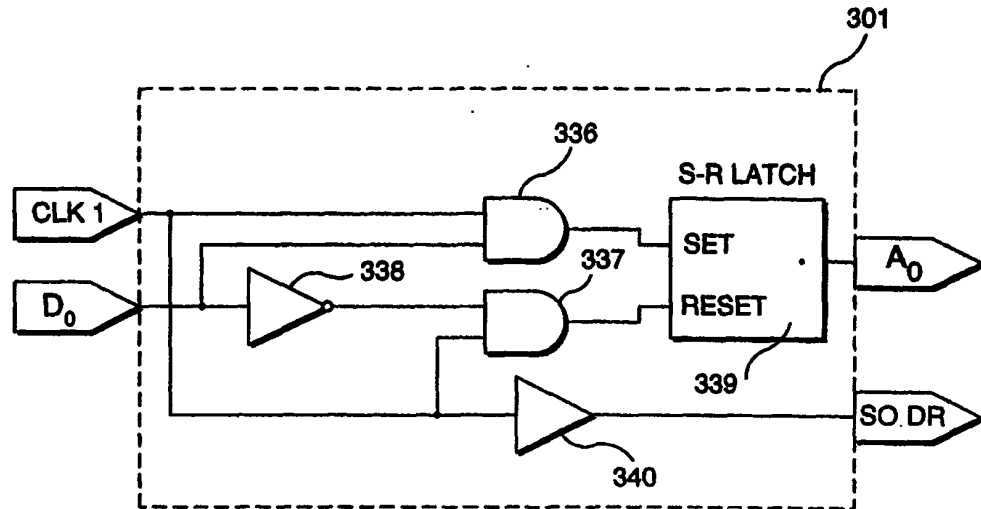


FIG. 15B2

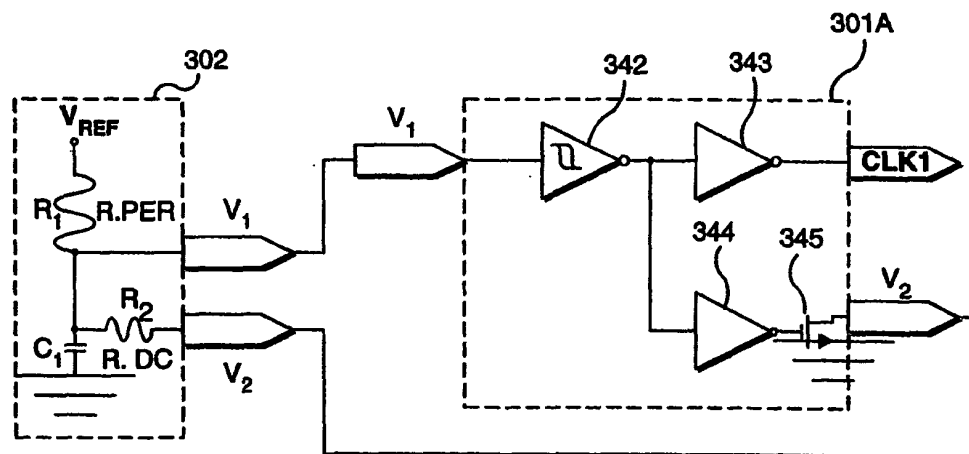


FIG. 15C

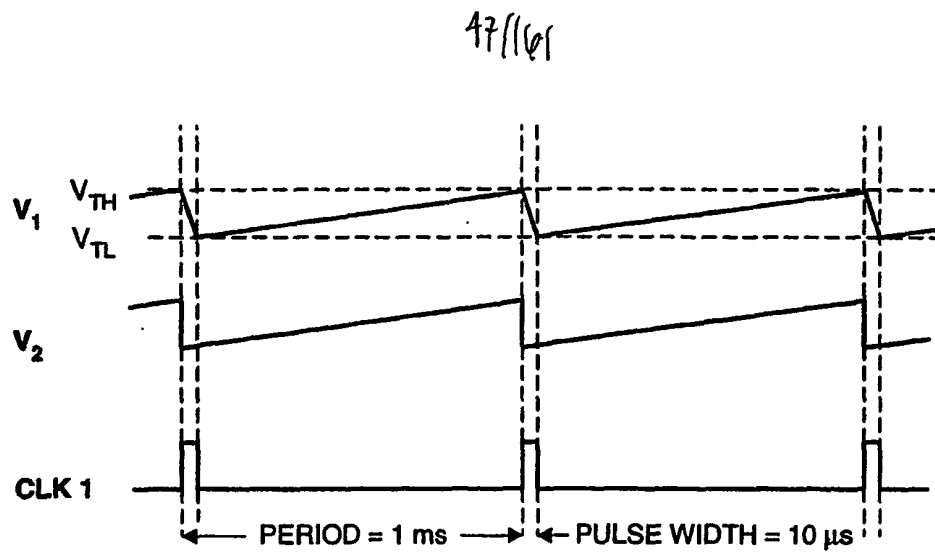


FIG. 15D

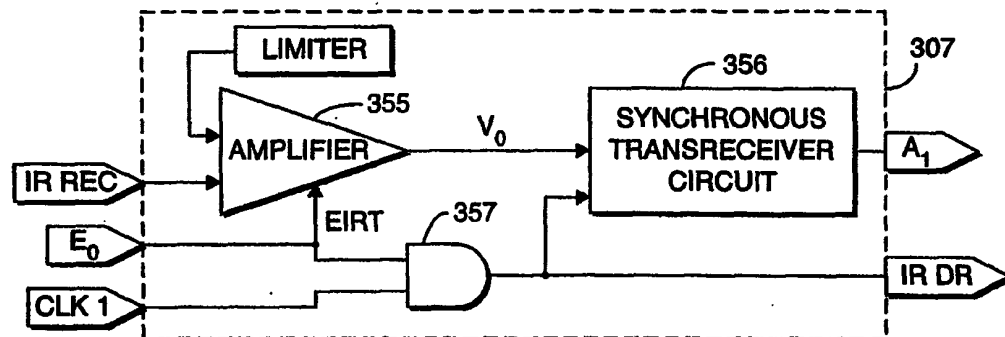


FIG. 15E

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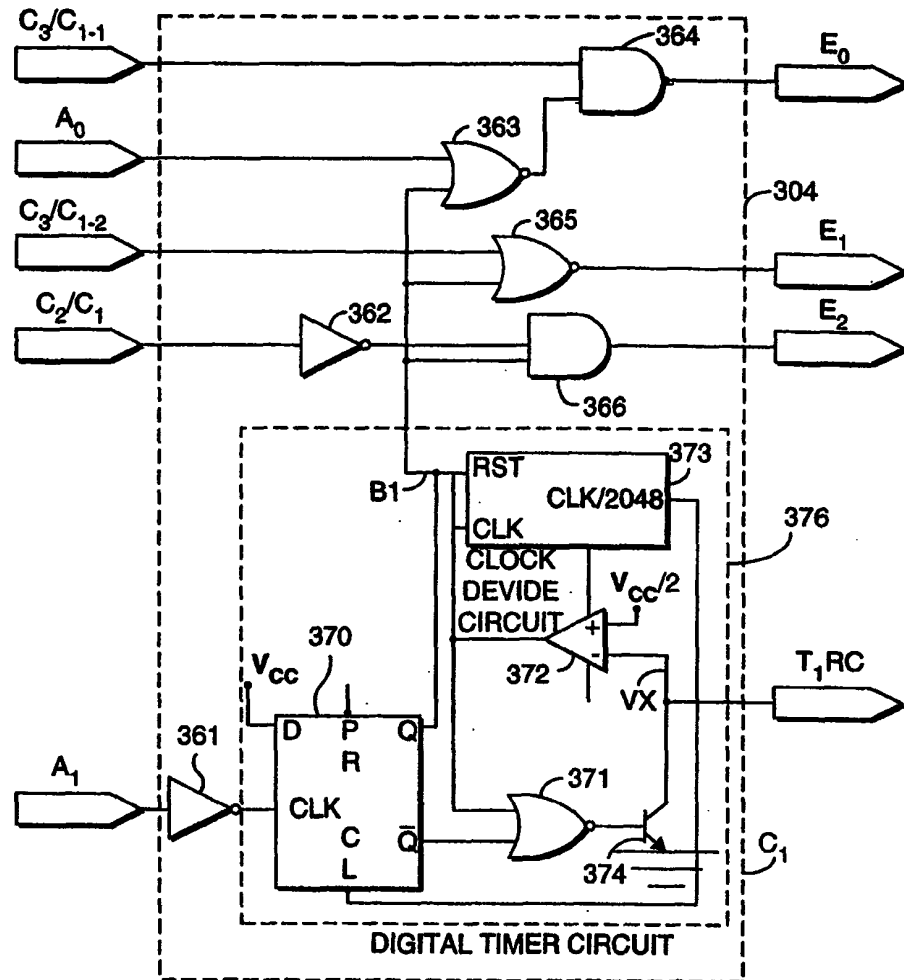


FIG. 15F



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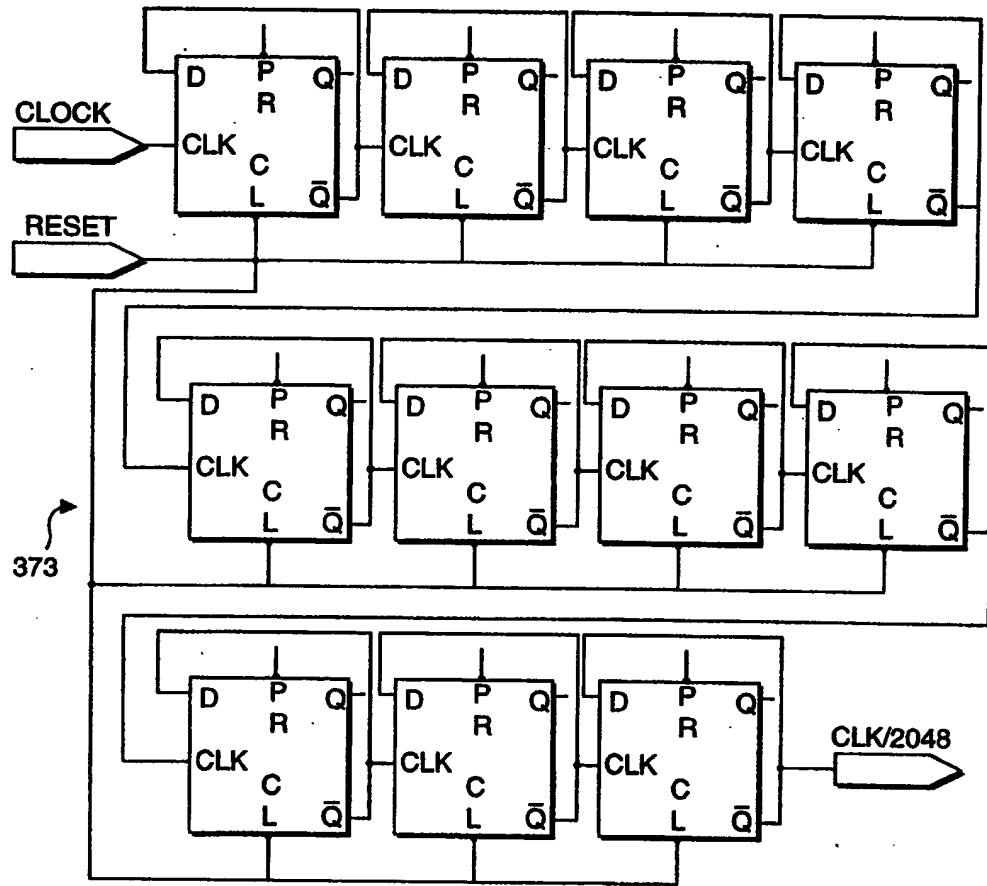


FIG. 15G

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$$\left. \begin{aligned} E_0 &= (B1 + A_0) (C_3 / C_{1-1}) \\ E_1 &= (C_3 / C_{1-2}) + B1 \\ E_2 &= (C_2 / C_1) (T_1) \end{aligned} \right\}$$

FIG. 15H

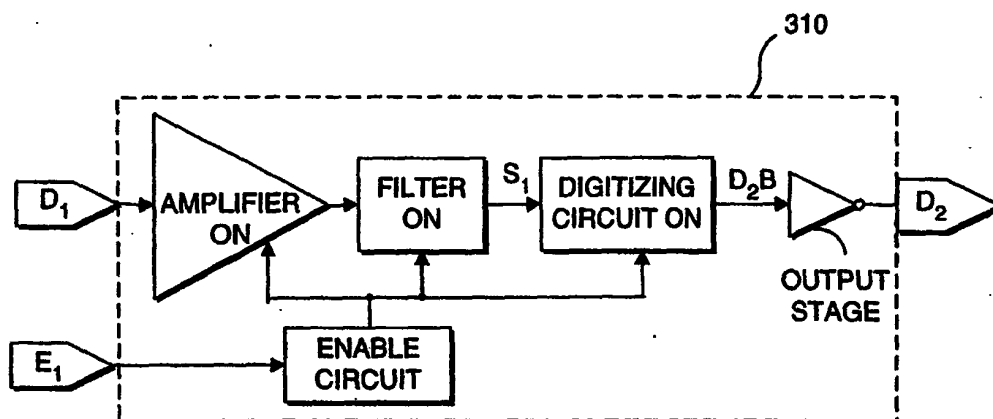


FIG. 15I

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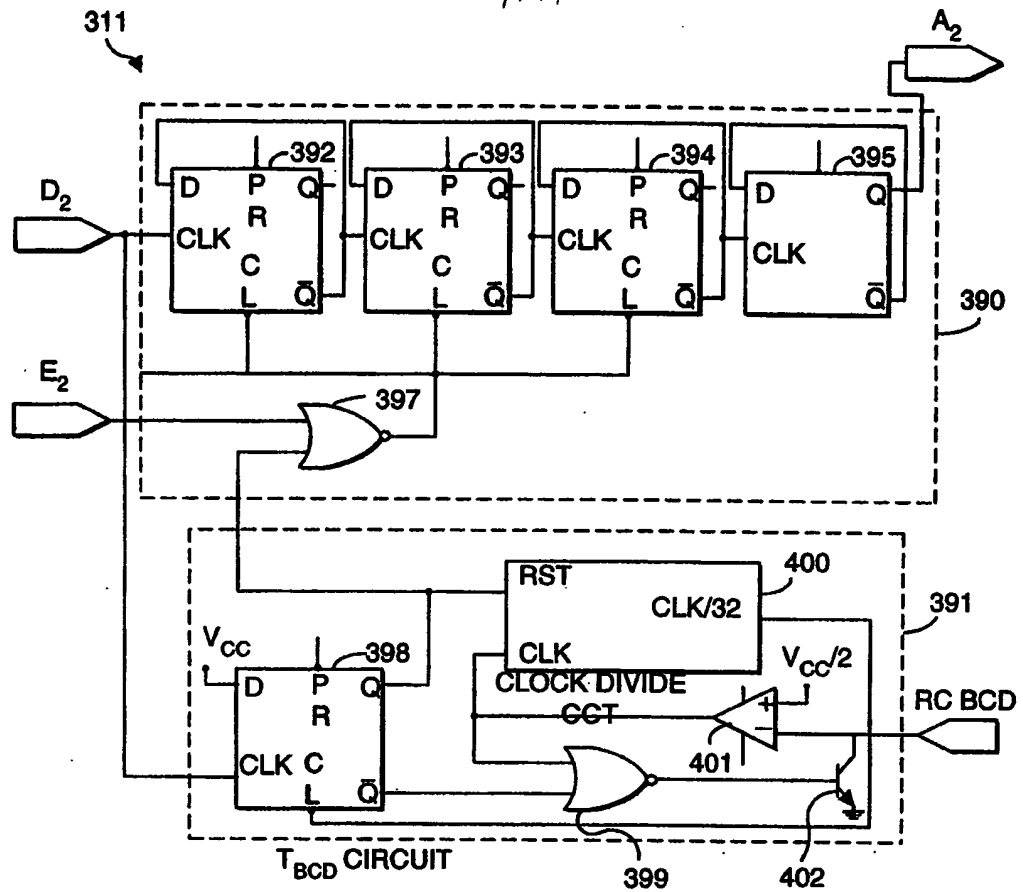


FIG. 15J

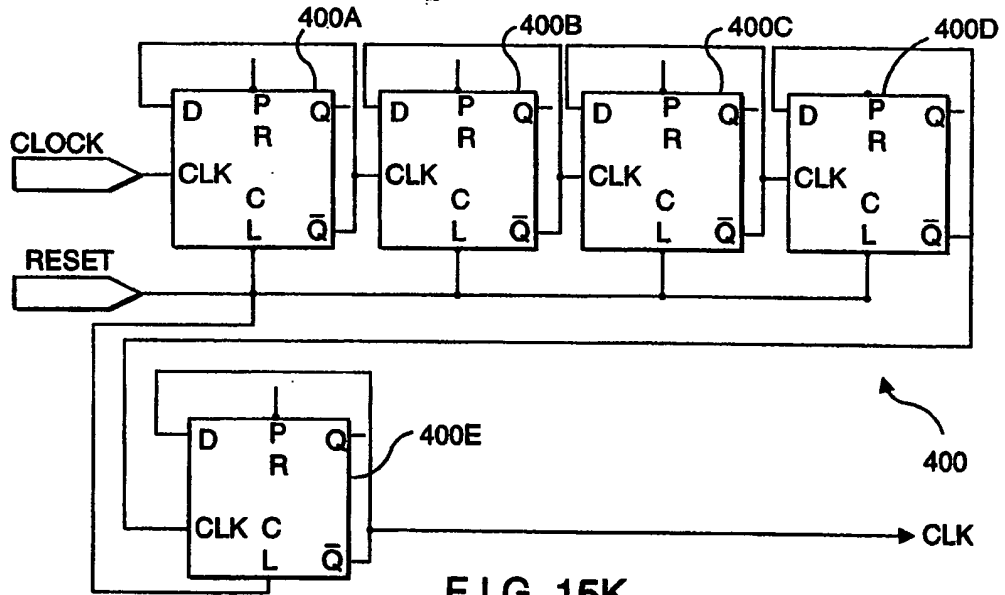


FIG. 15K

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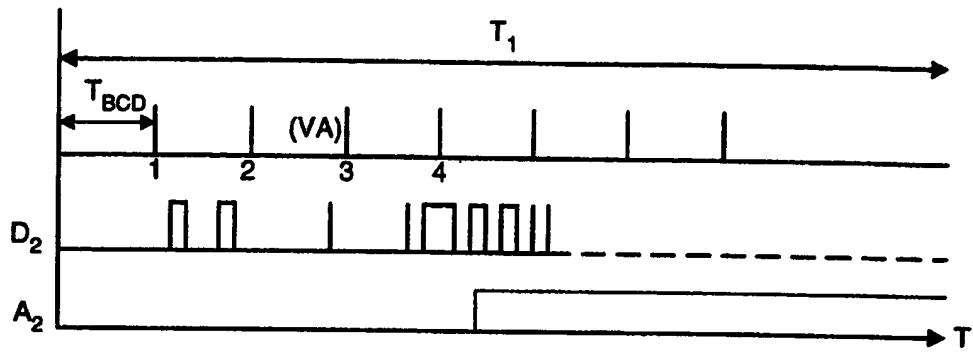


FIG. 15L

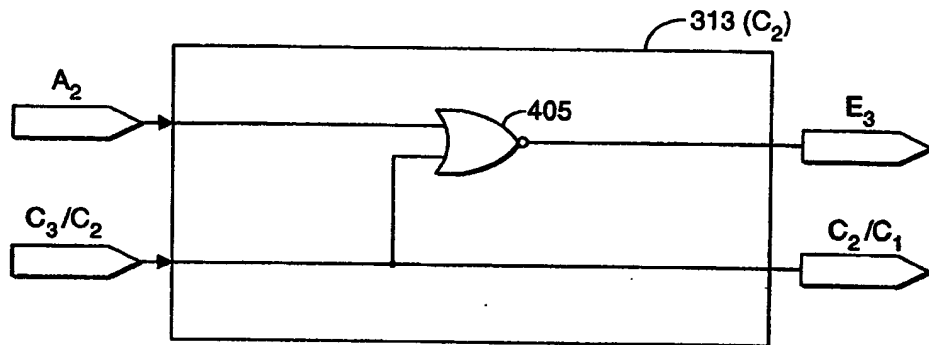


FIG. 15M

$C_3/C_2$	$A_2$	$E_3$	$C_2/C_1$
0	0	0	0
0	1	1	0
1	X	1	1

X: DON'T CARE (I.E.  $C_3/C_2$  OVERRIDES  $A_2$ )

FIG. 15N

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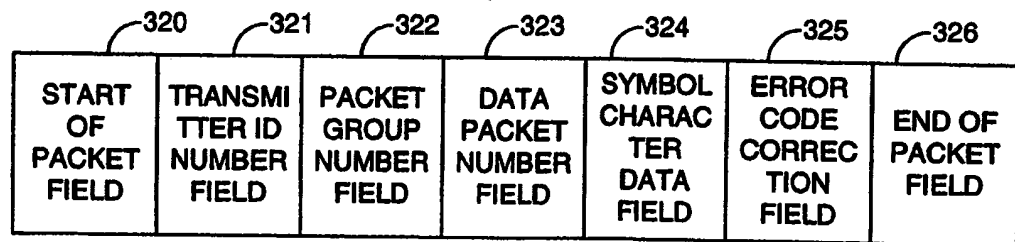


FIG. 150

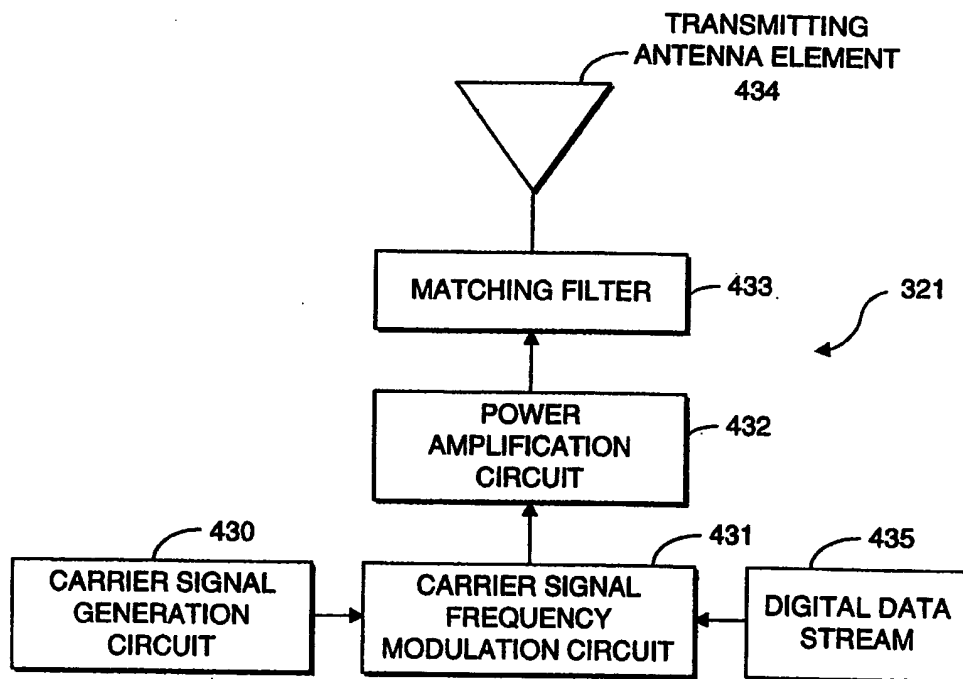
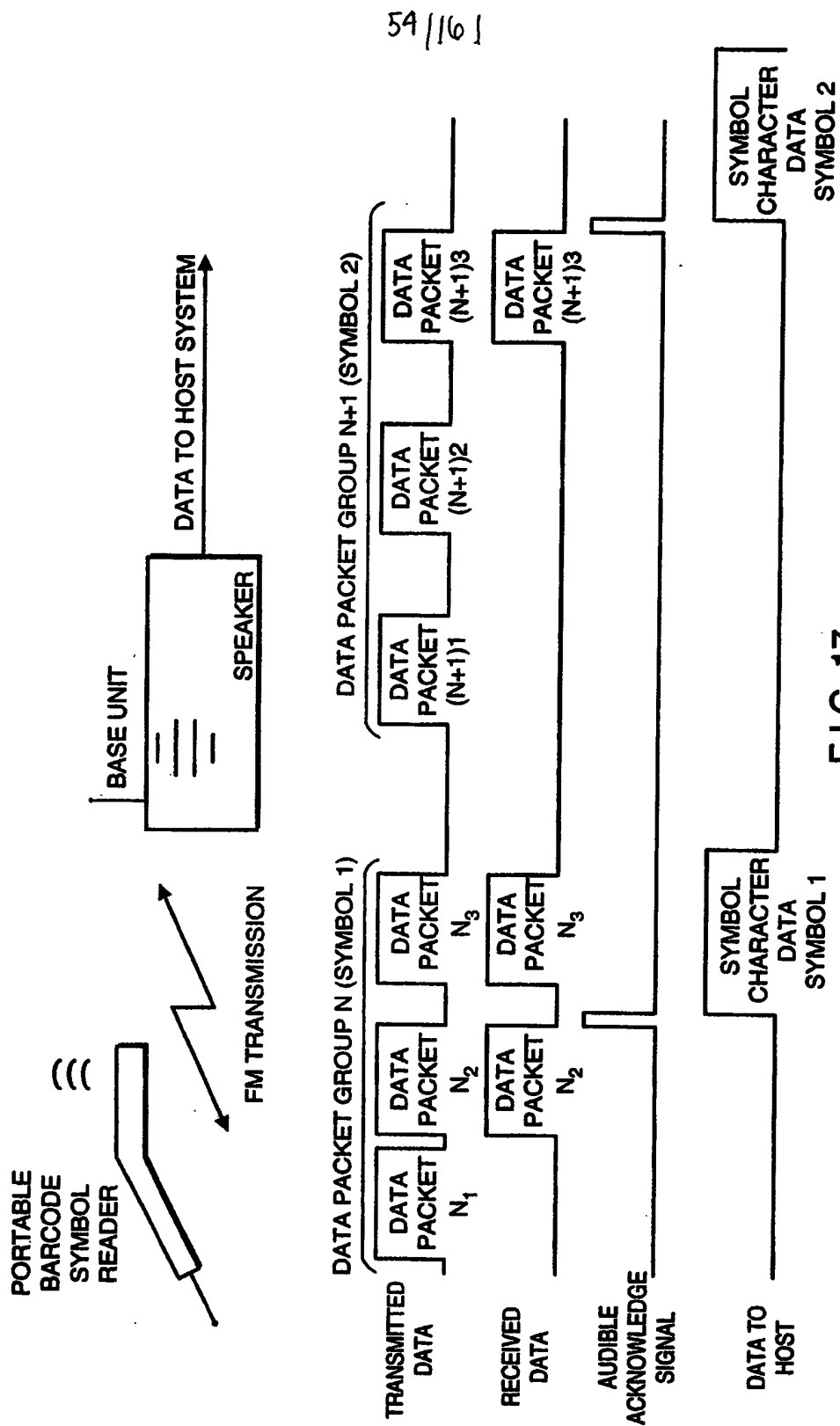


FIG. 16



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FIG. 18

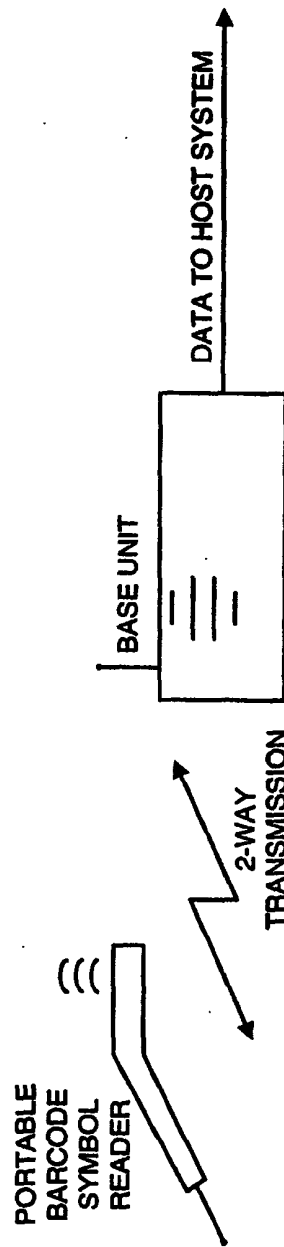


FIG. 19

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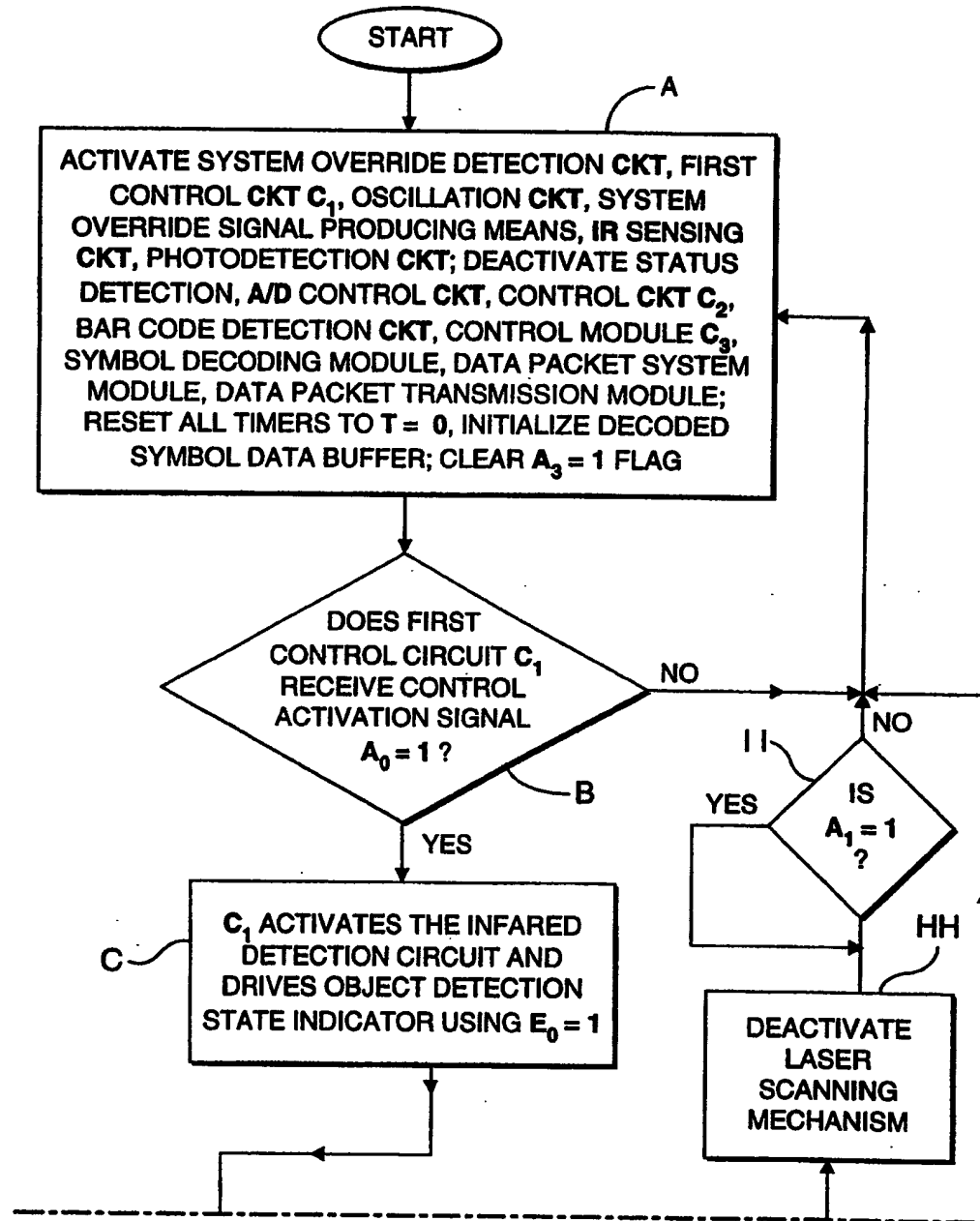


FIG. 20A1



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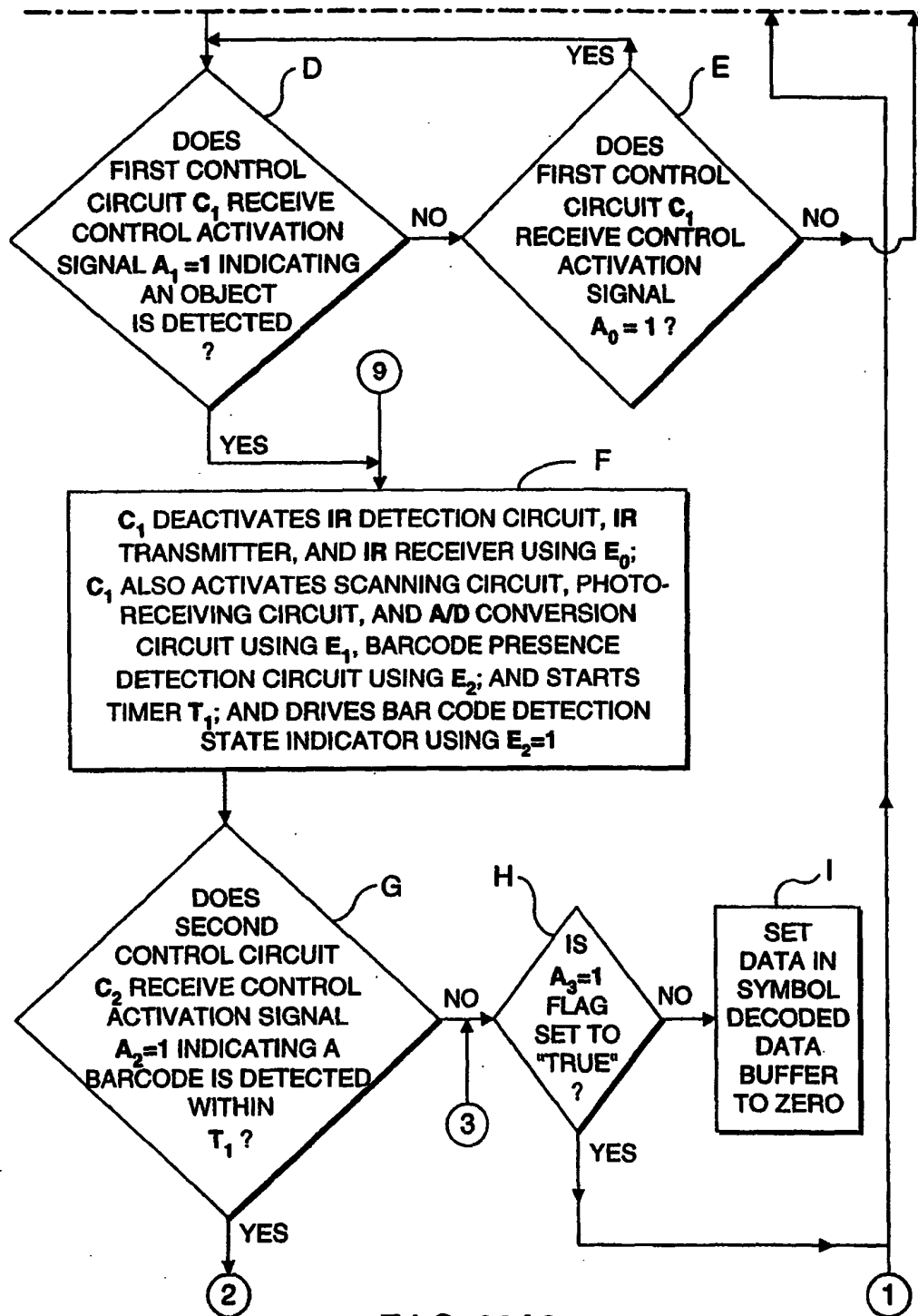


FIG. 20A2

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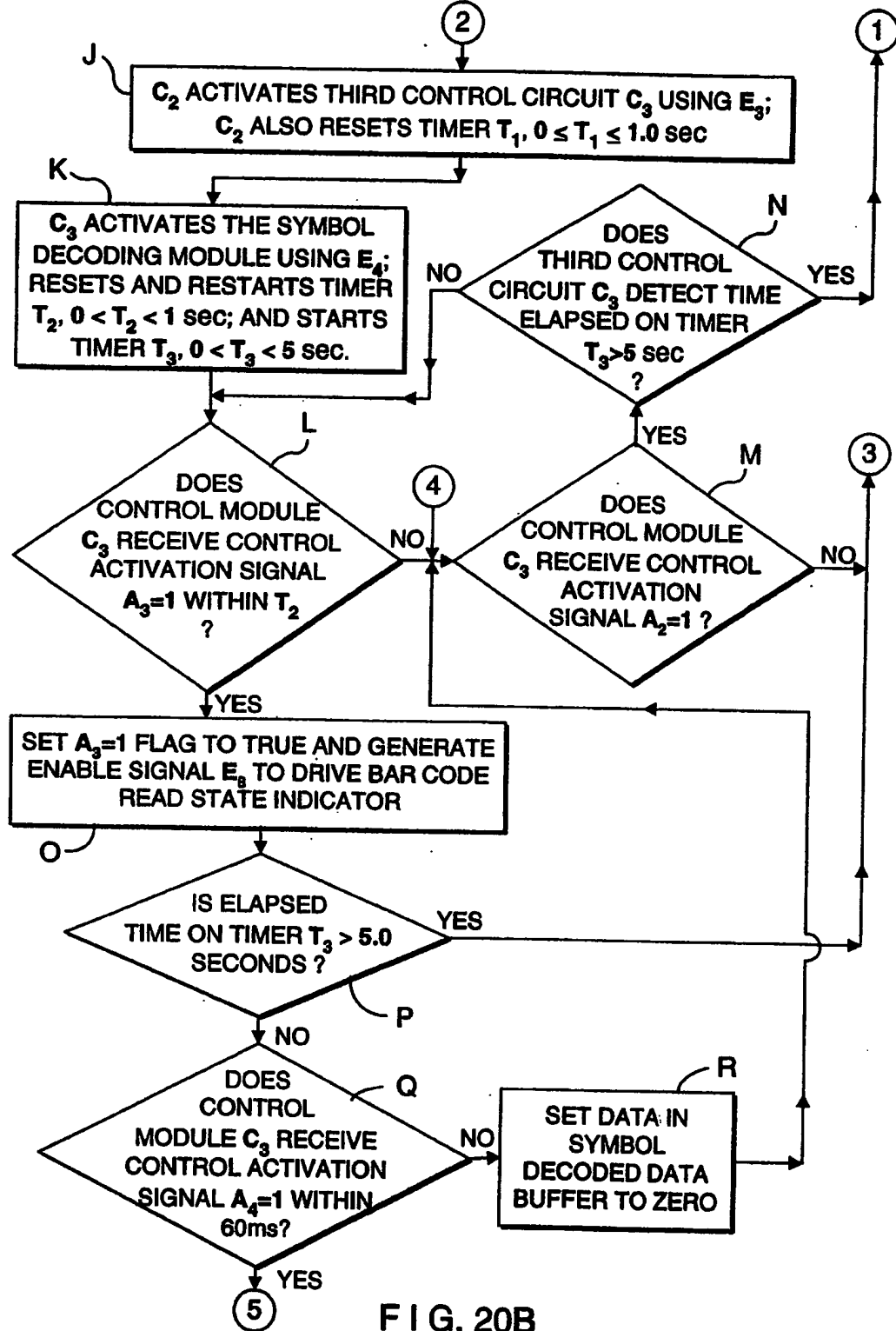


FIG. 20B

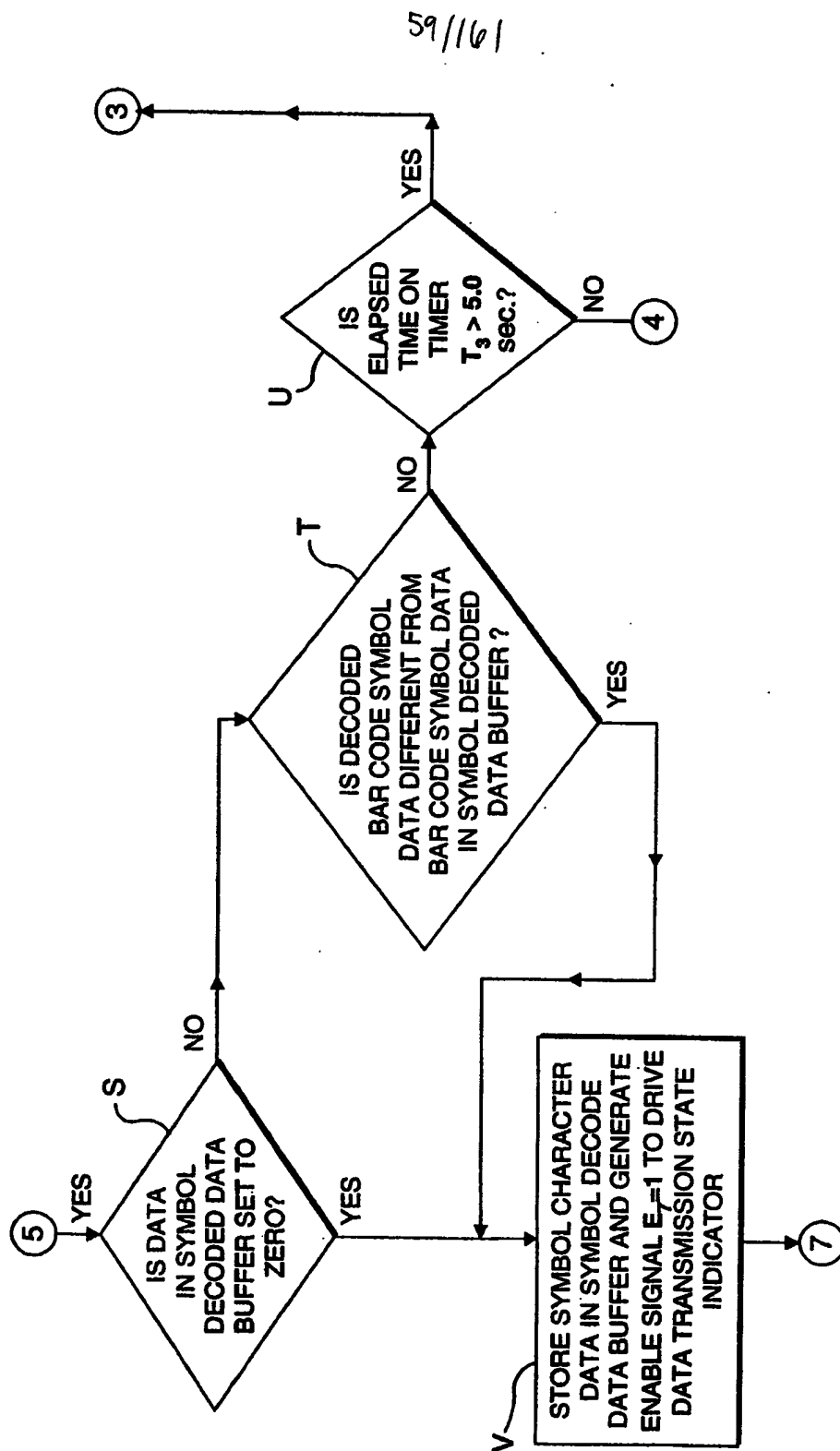


FIG. 20C

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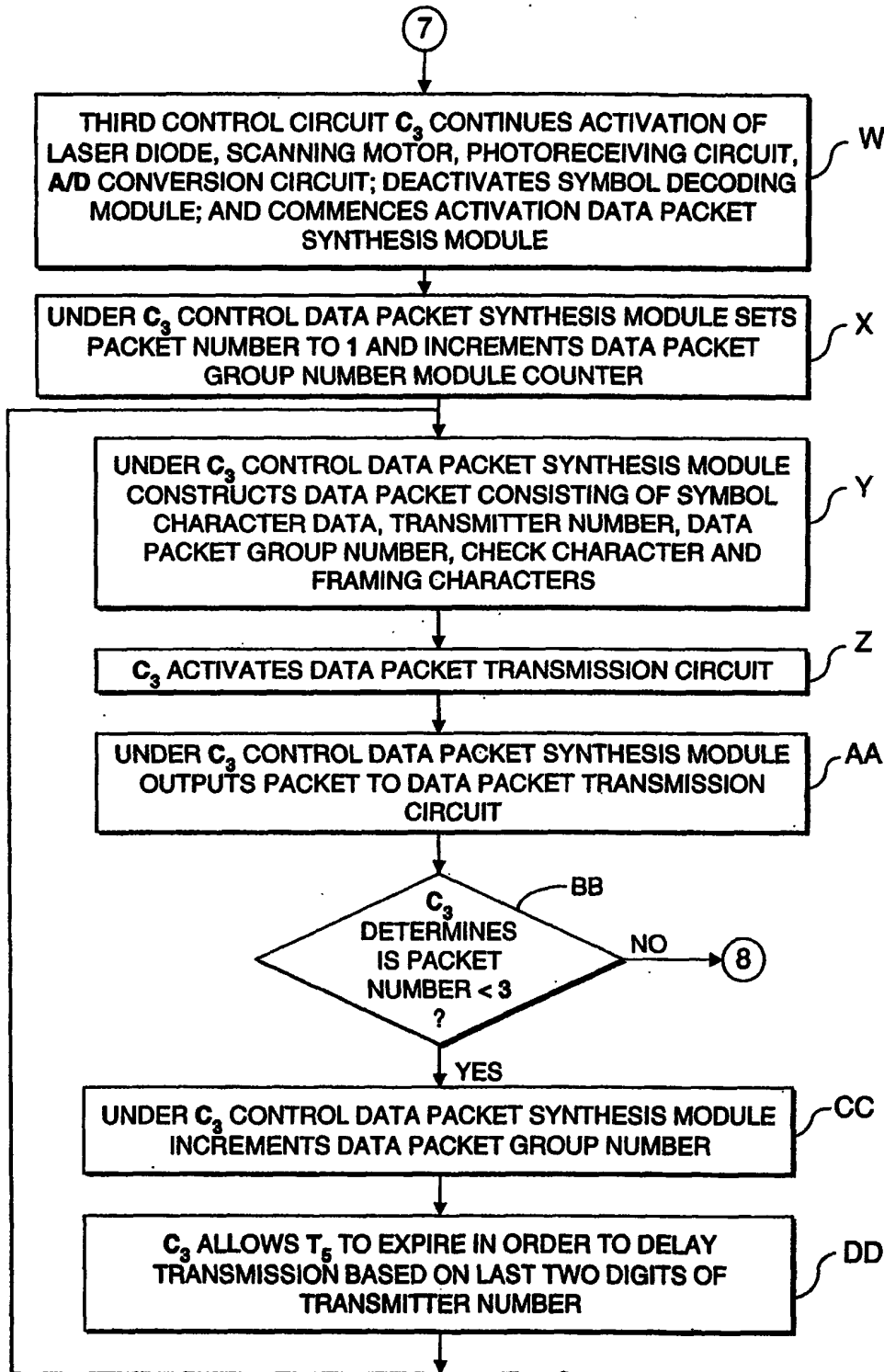


FIG. 20D

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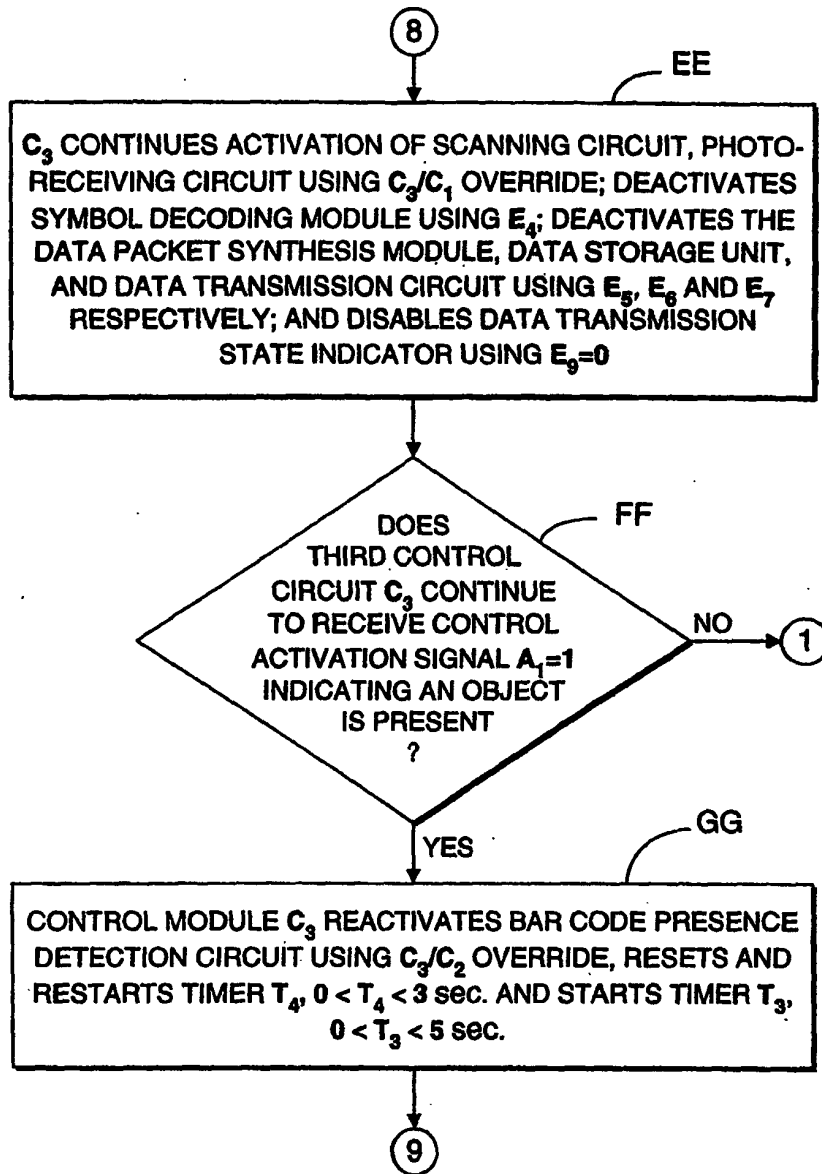


FIG. 20E

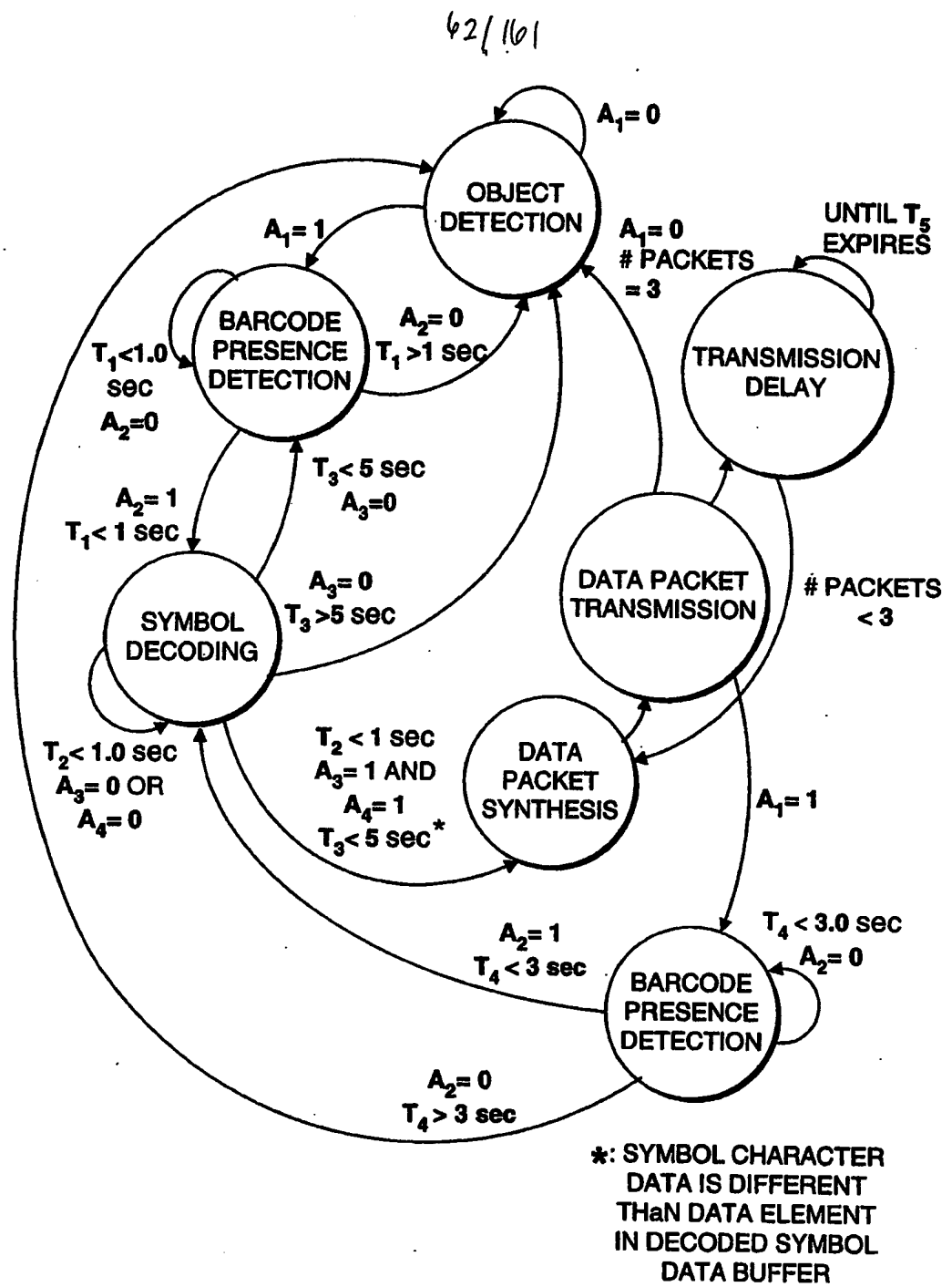


FIG. 21

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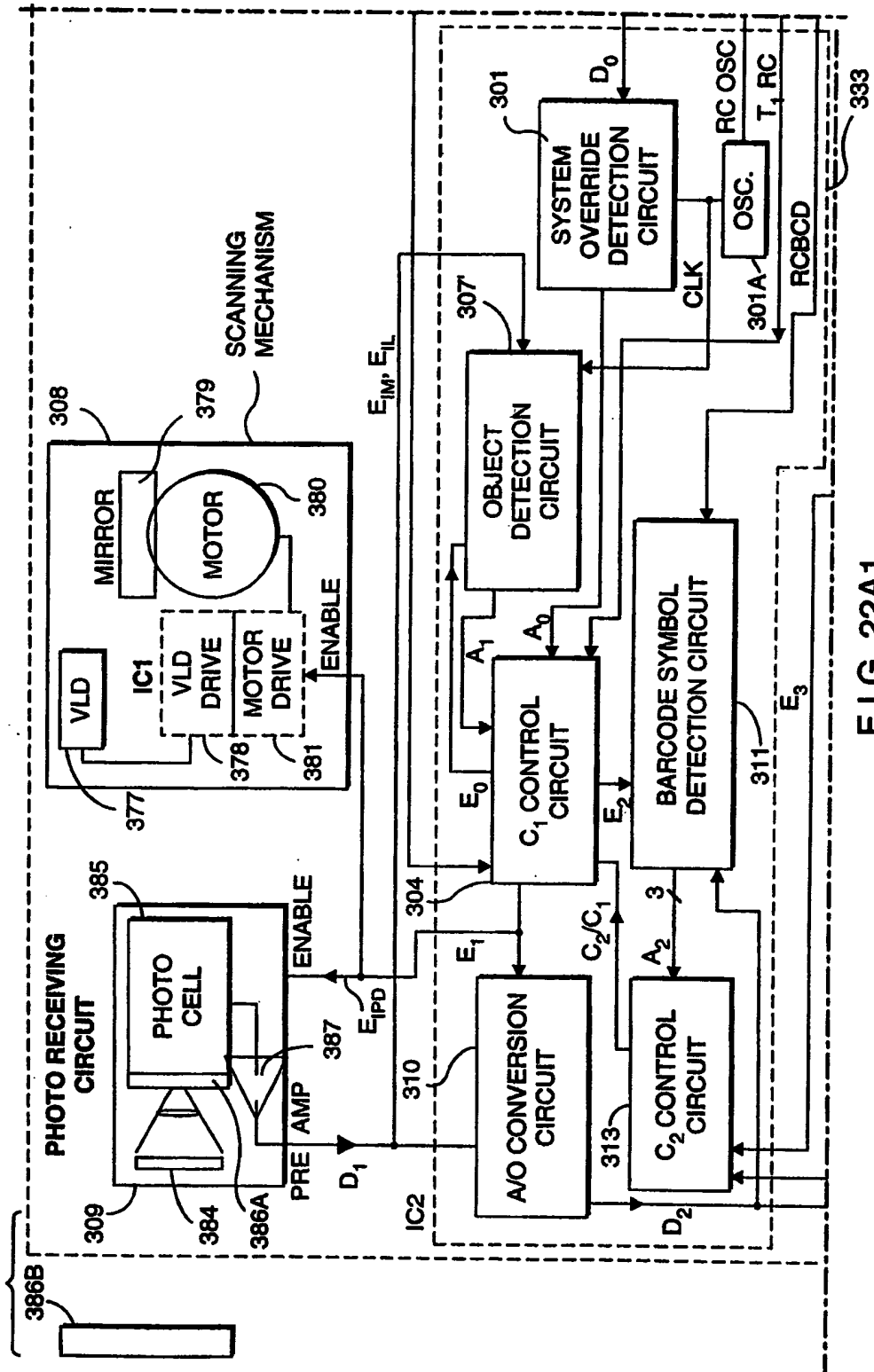


FIG. 22A1

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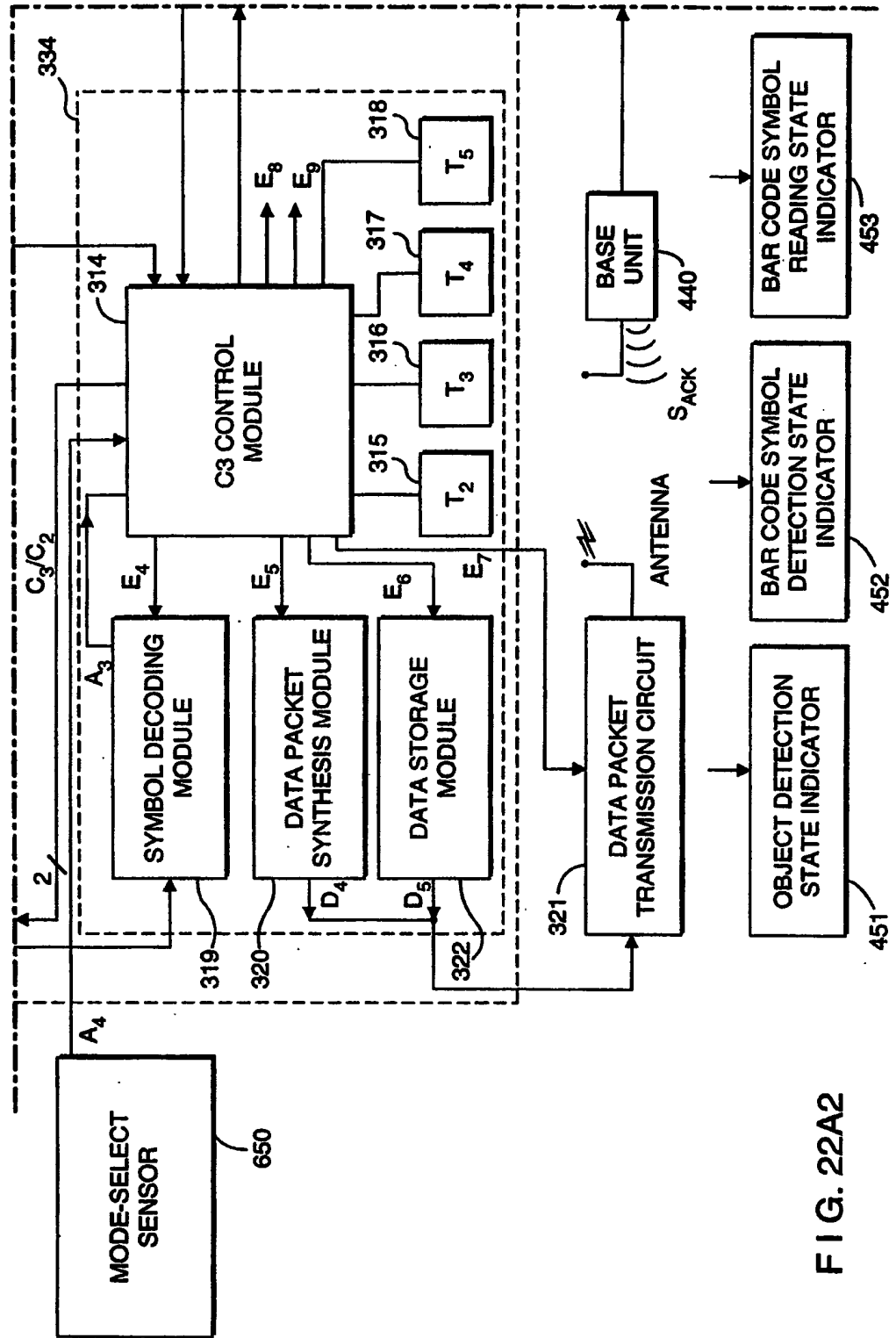


FIG. 22A2



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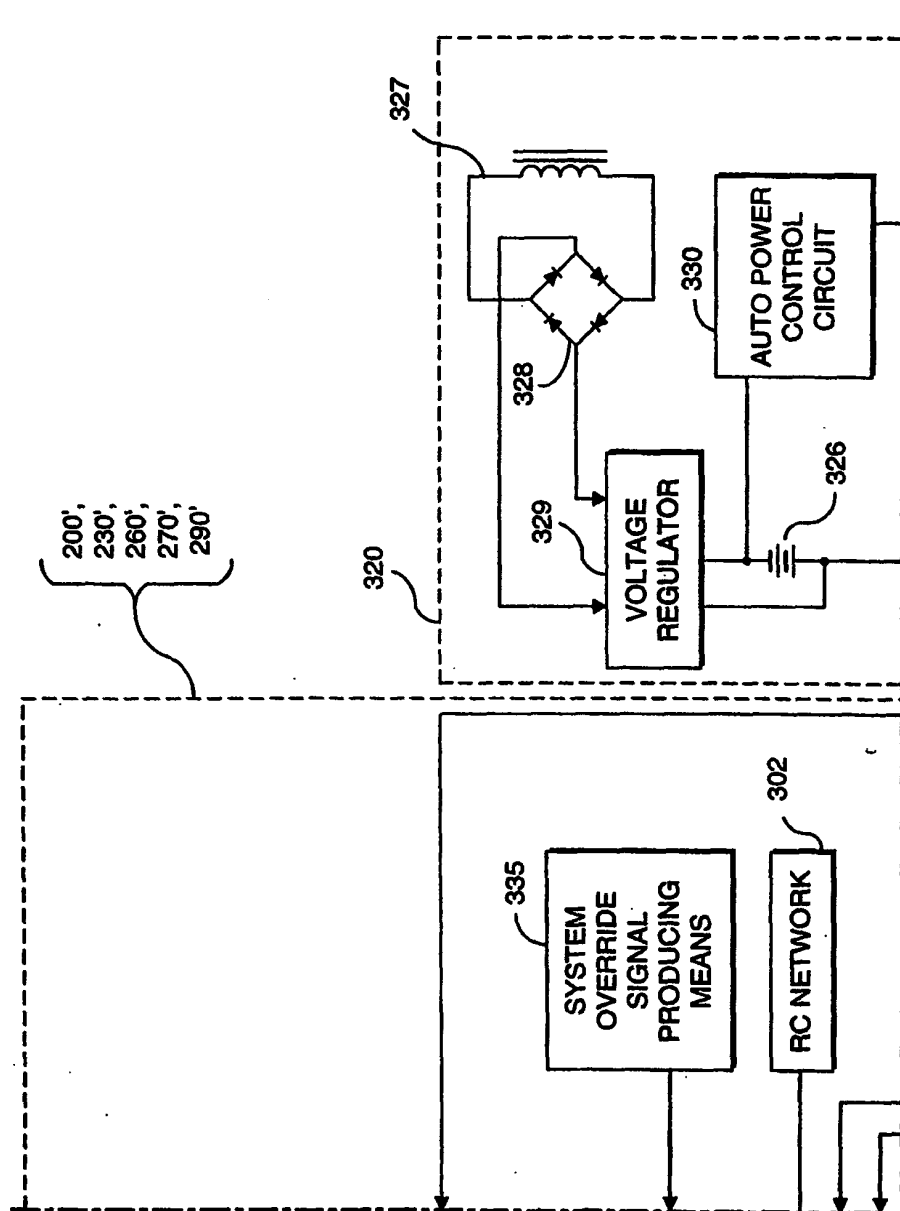


FIG. 22A3

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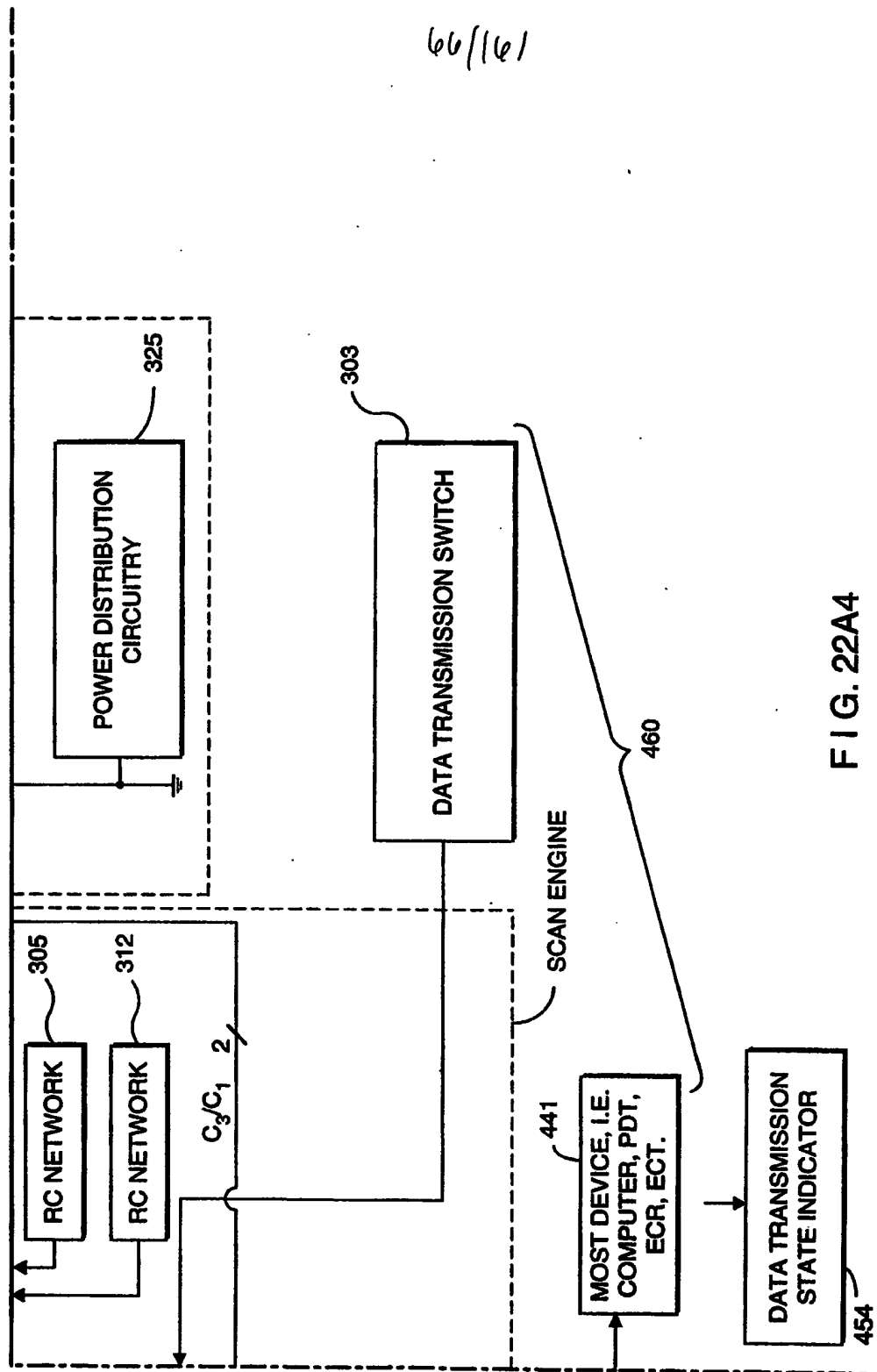


FIG. 22A4

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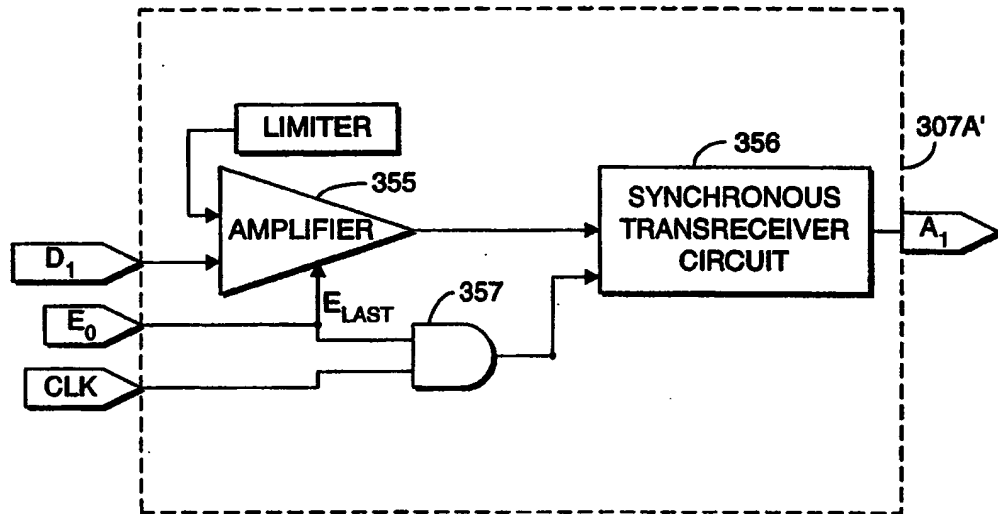


FIG. 22B

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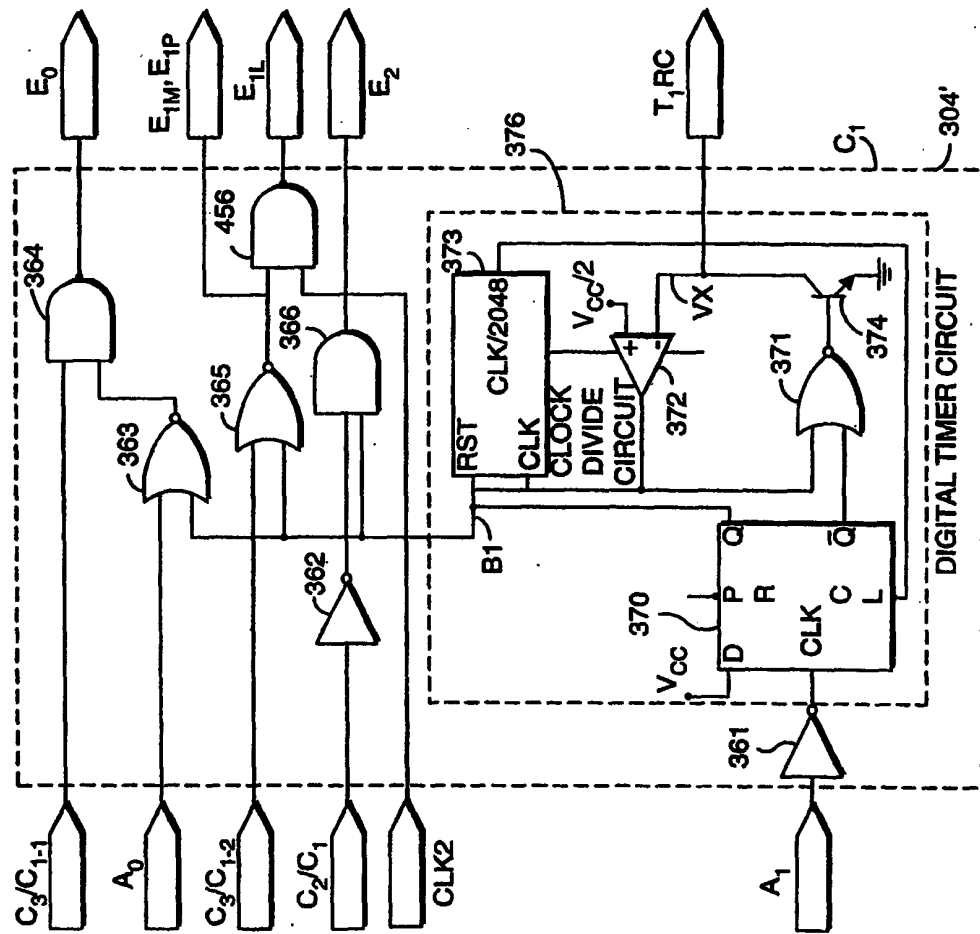


FIG. 22C

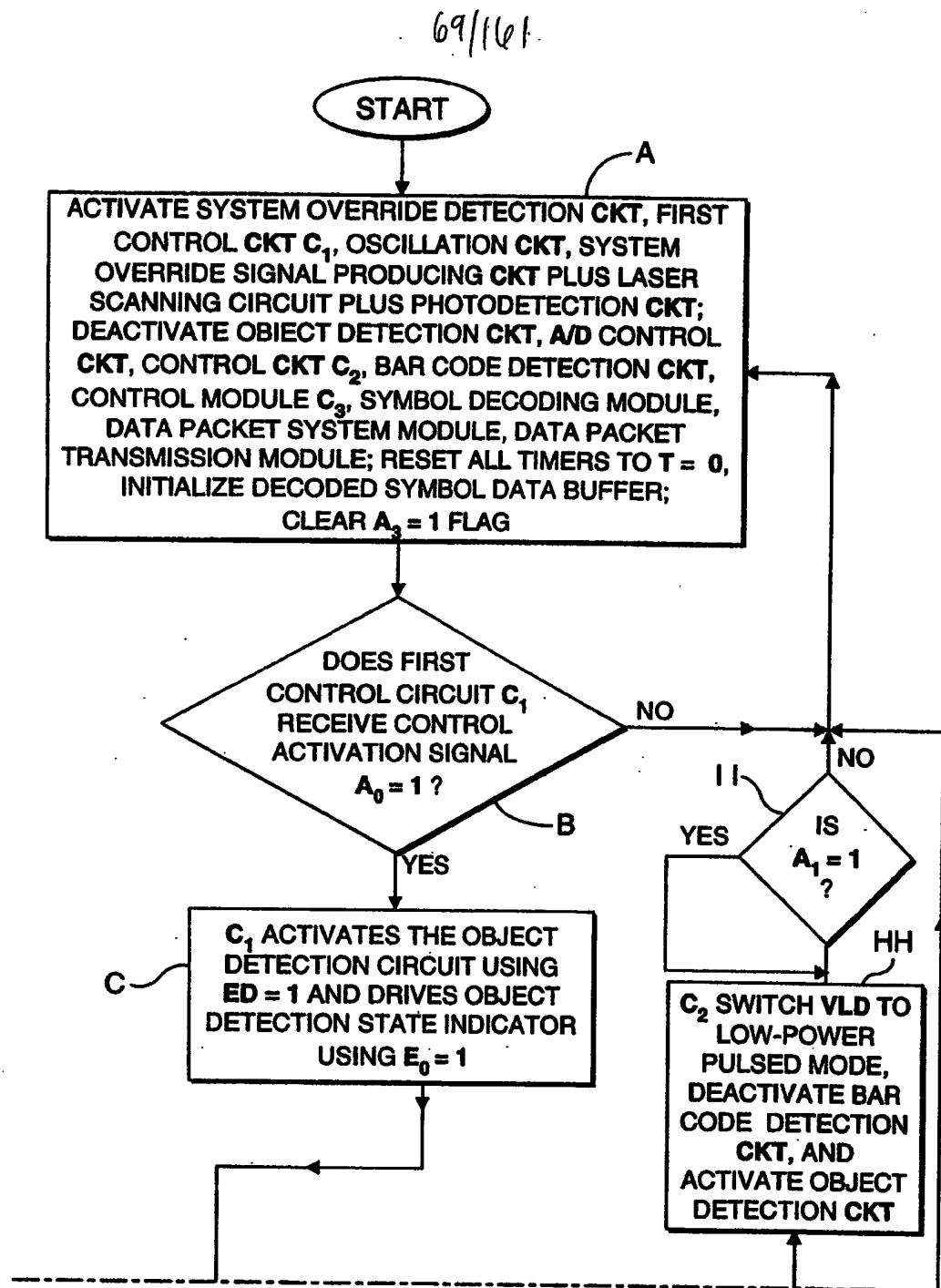


FIG. 23A1

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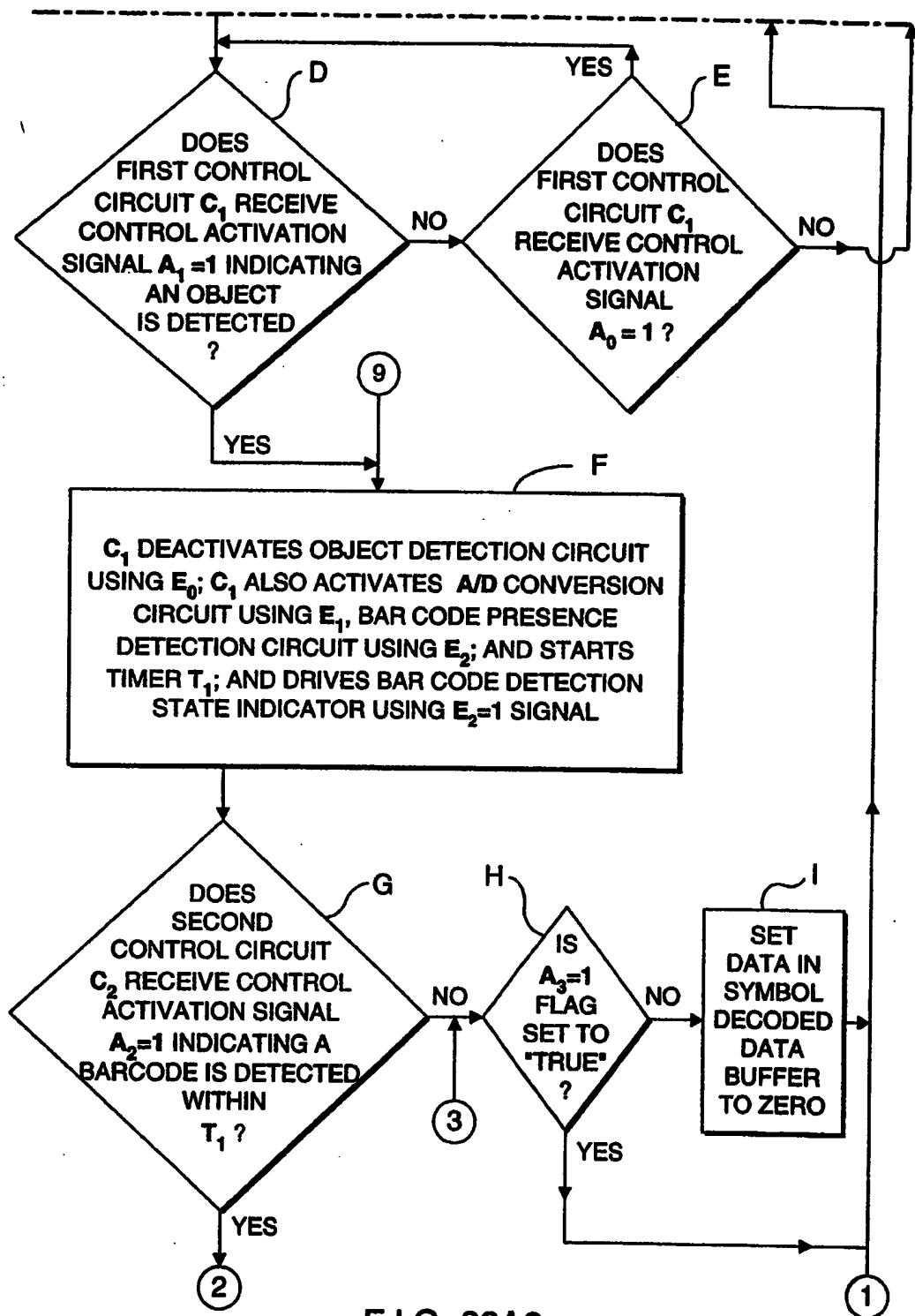
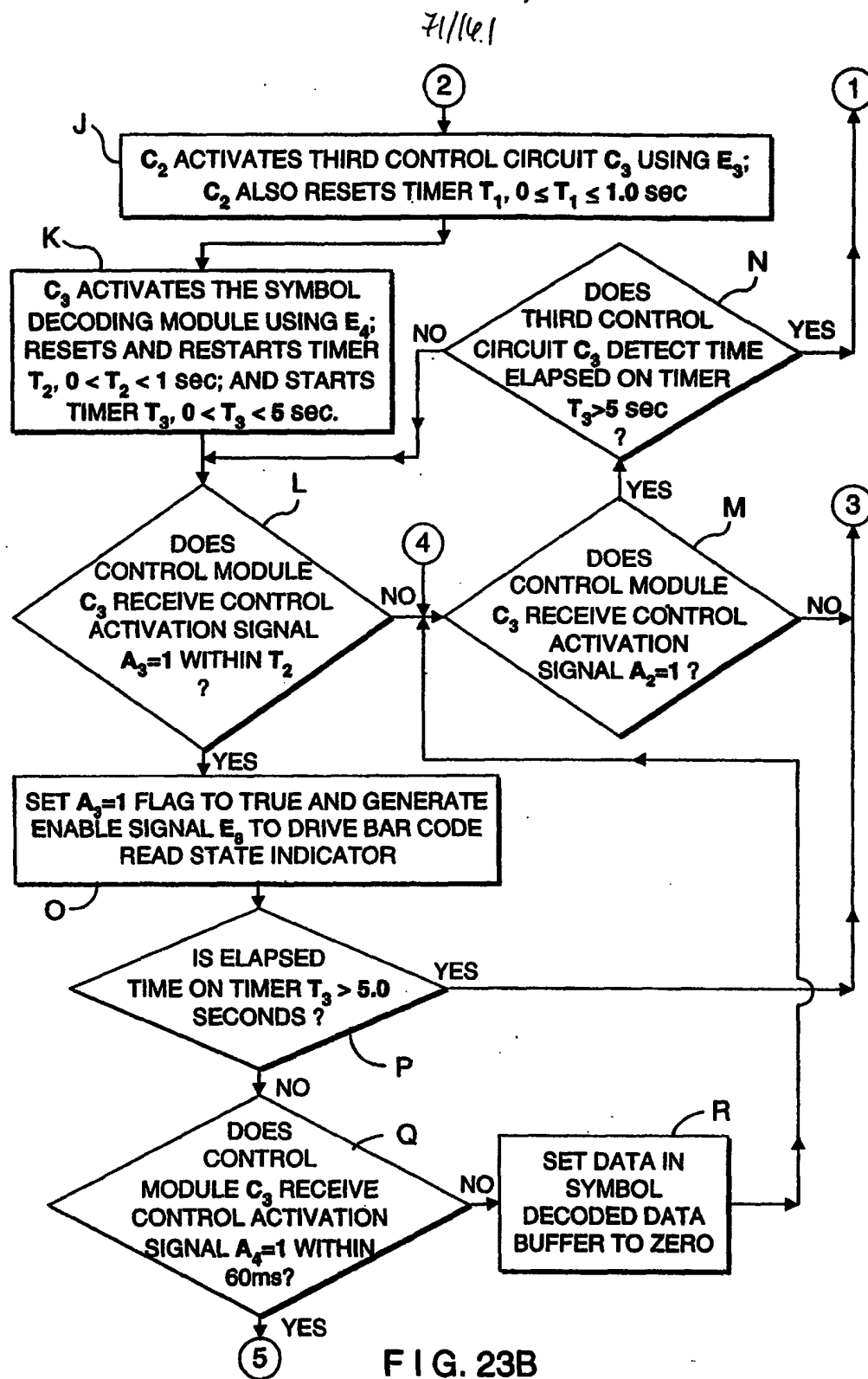


FIG. 23A2



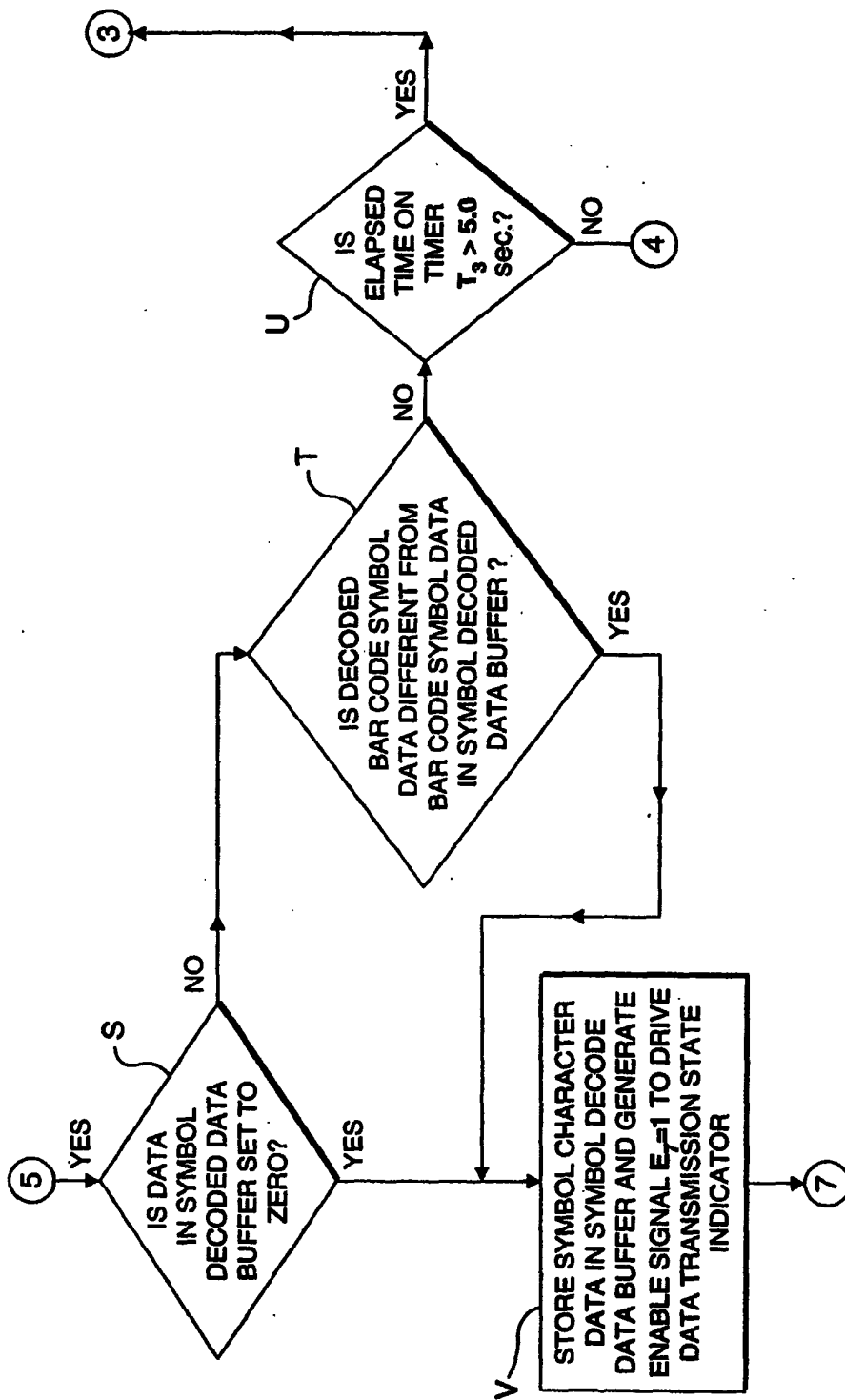


FIG. 23C



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7

THIRD CONTROL CIRCUIT  $C_3$  CONTINUES ACTIVATION OF LASER DIODE, SCANNING MOTOR, PHOTORECEIVING CIRCUIT, A/D CONVERSION CIRCUIT; DEACTIVATES SYMBOL DECODING MODULE; AND COMMENCES ACTIVATION DATA PACKET SYNTHESIS MODULE W

UNDER  $C_3$  CONTROL DATA PACKET SYNTHESIS MODULE SETS PACKET NUMBER TO 1 AND INCREMENTS DATA PACKET GROUP NUMBER MODULE COUNTER X

UNDER  $C_3$  CONTROL DATA PACKET SYNTHESIS MODULE CONSTRUCTS DATA PACKET CONSISTING OF SYMBOL CHARACTER DATA, TRANSMITTER NUMBER, DATA PACKET GROUP NUMBER, CHECK CHARACTER AND FRAMING CHARACTERS Y

$C_3$  ACTIVATES DATA PACKET TRANSMISSION CIRCUIT Z

UNDER  $C_3$  CONTROL DATA PACKET SYNTHESIS MODULE OUTPUTS PACKET TO DATA PACKET TRANSMISSION CIRCUIT AA

$C_3$  DETERMINES IS PACKET NUMBER  $< 3$  ? BB

NO → 8

YES

UNDER  $C_3$  CONTROL DATA PACKET SYNTHESIS MODULE INCREMENTS DATA PACKET GROUP NUMBER CC

$C_3$  ALLOWS  $T_5$  TO EXPIRE IN ORDER TO DELAY TRANSMISSION BASED ON LAST TWO DIGITS OF TRANSMITTER NUMBER DD

FIG. 23D

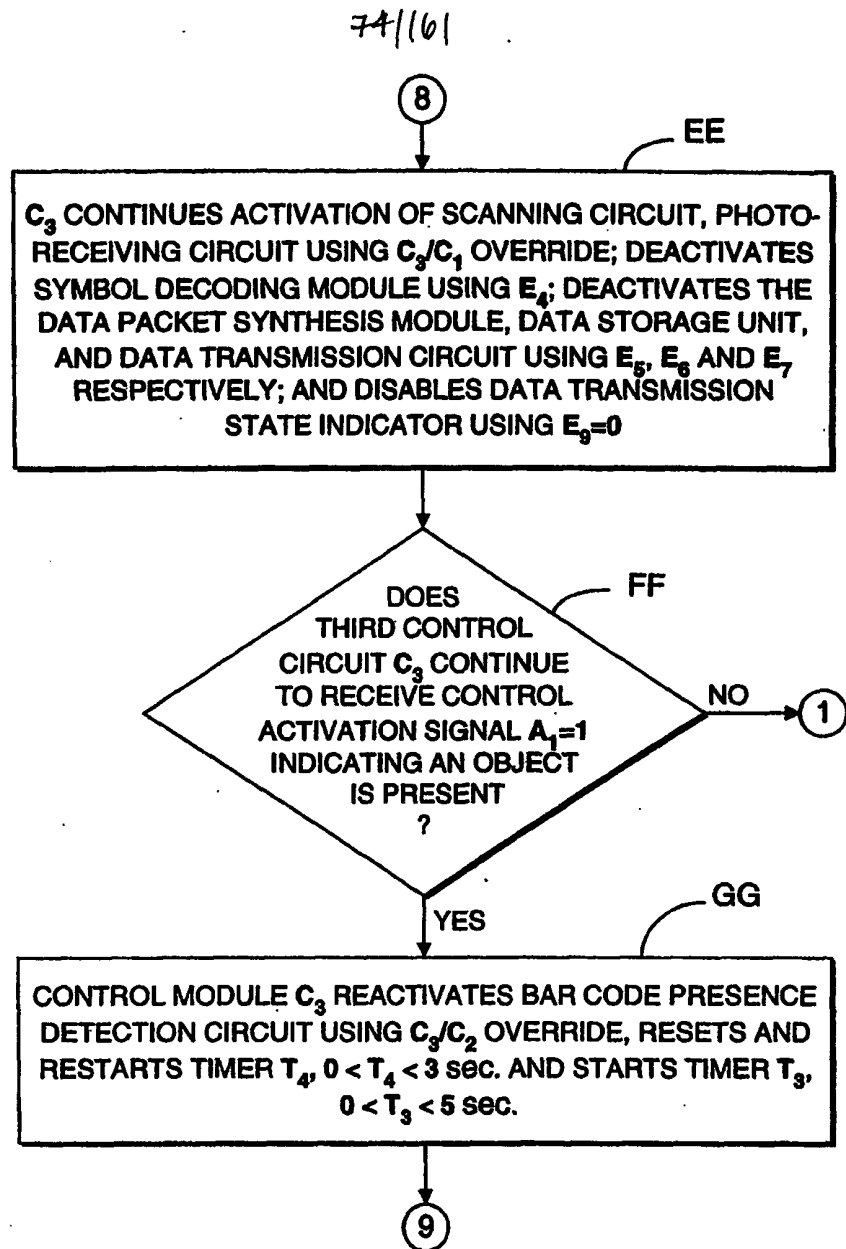


FIG. 23E

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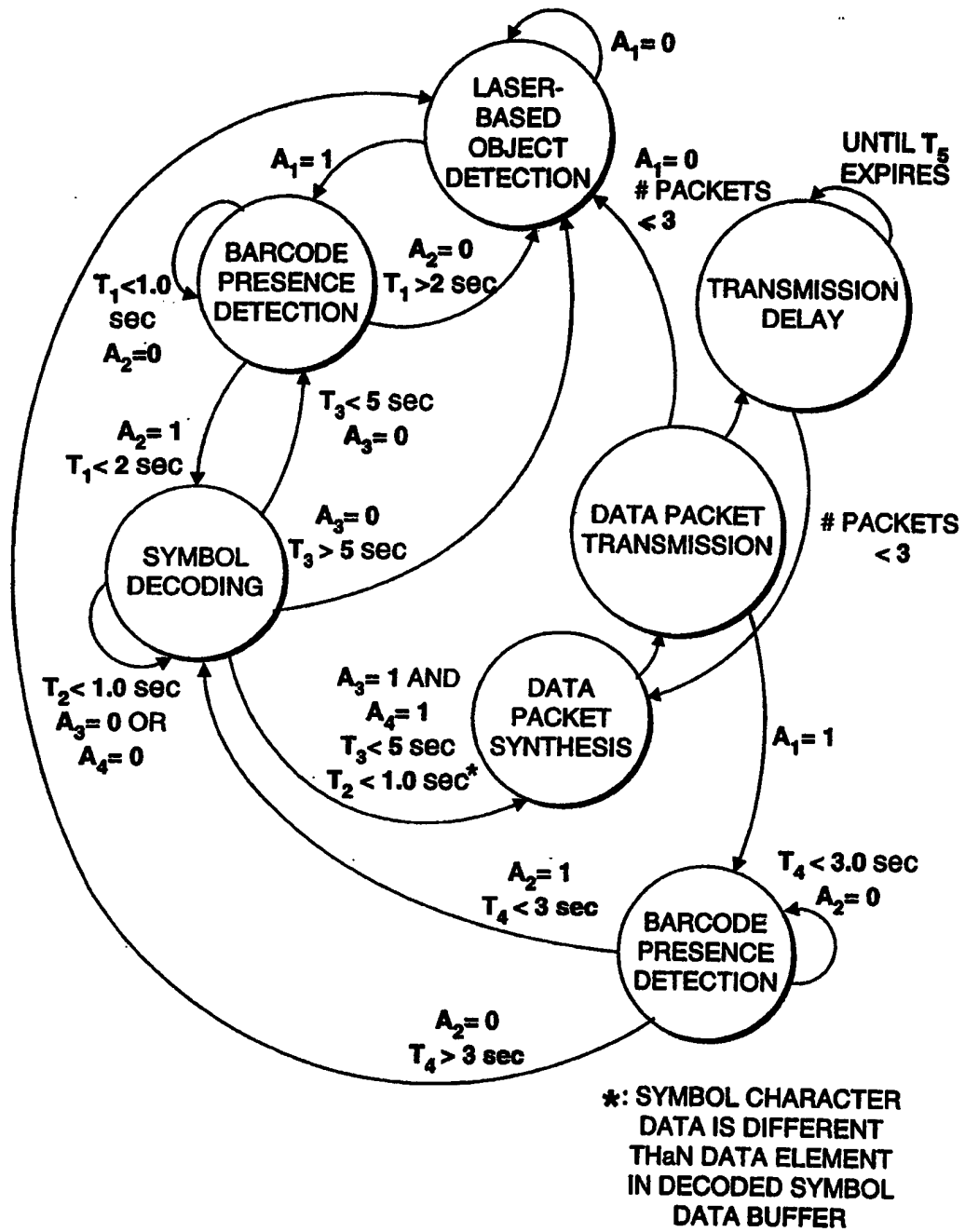


FIG. 24



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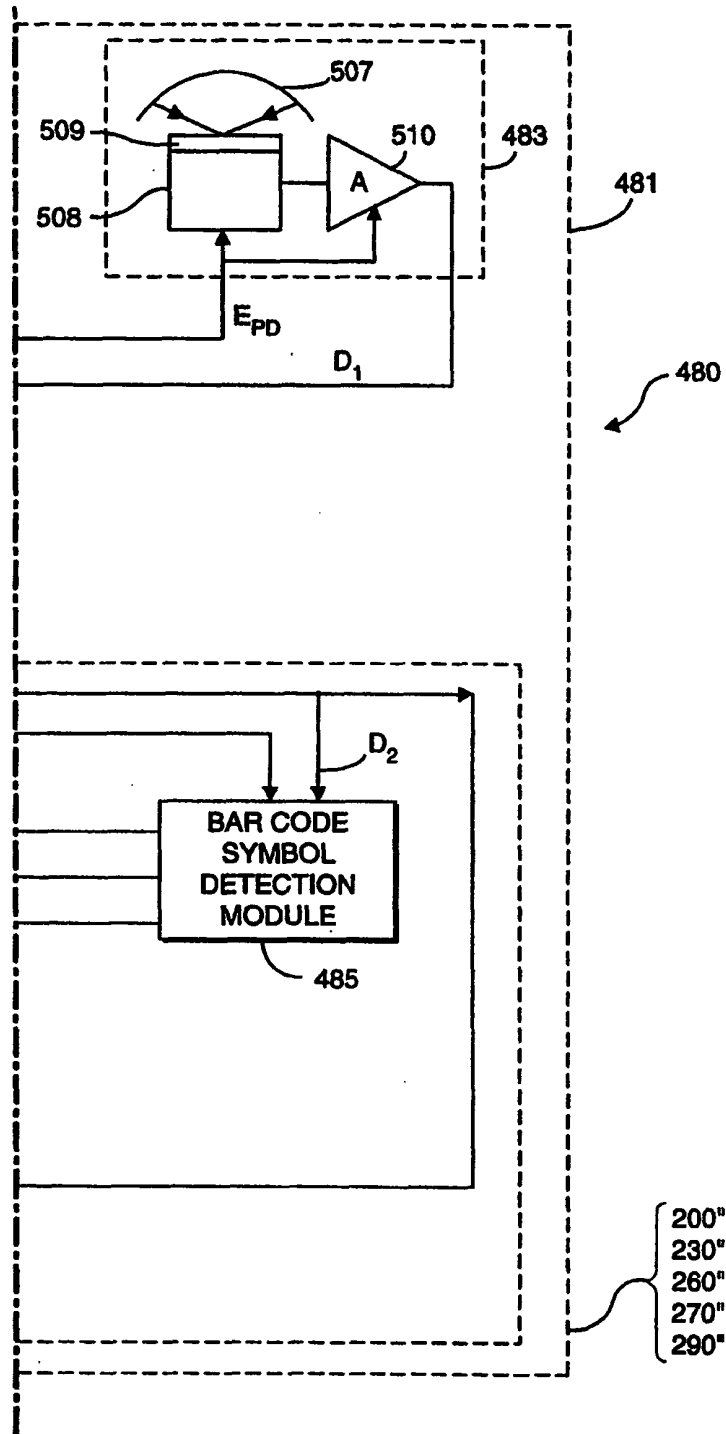
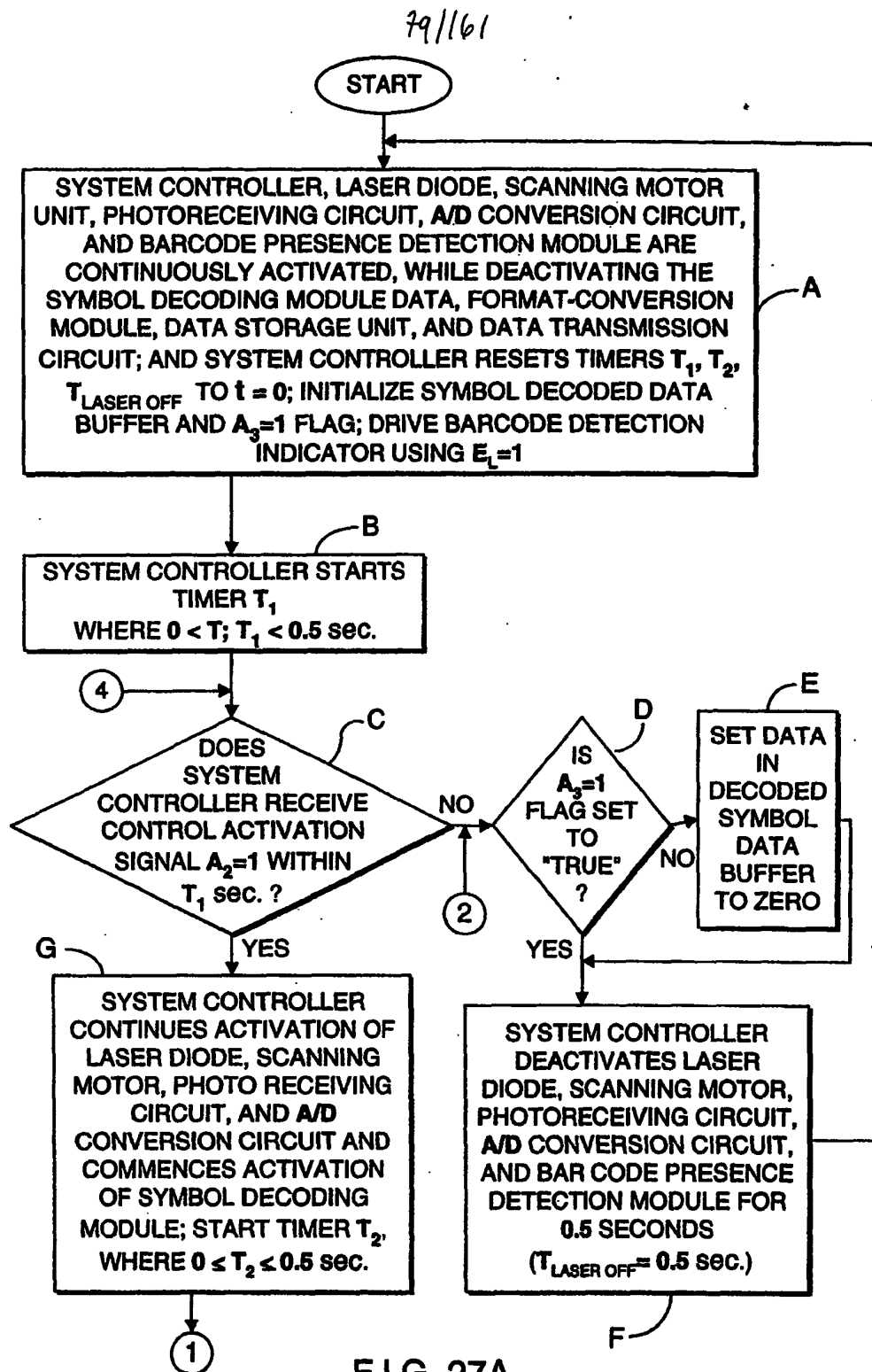


FIG. 25B

$T_1 = 1/2 \text{ sec.}, T_{\text{LASER OFF}} = 1/2 \text{ sec.}$

FIG. 26



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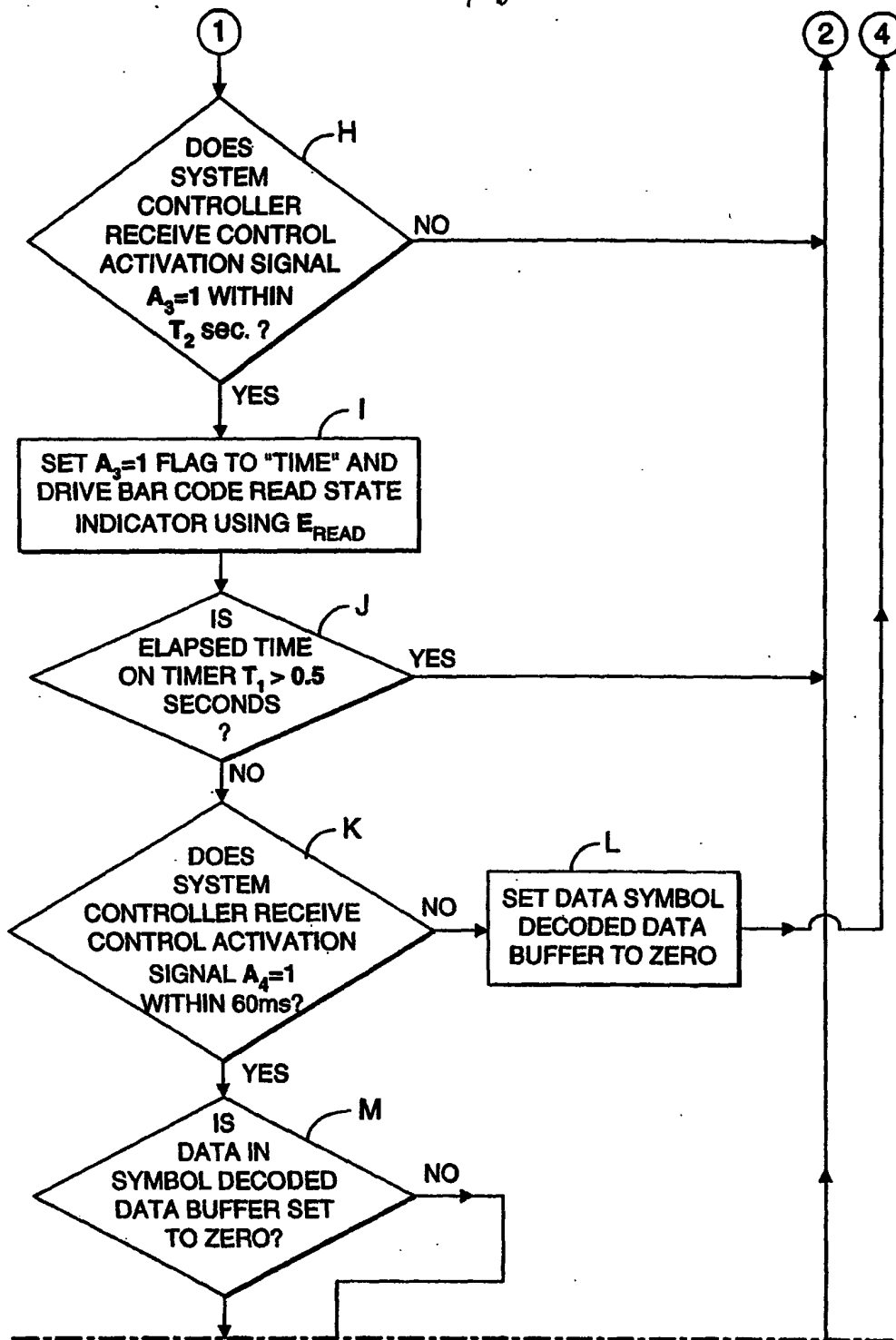


FIG. 27B1



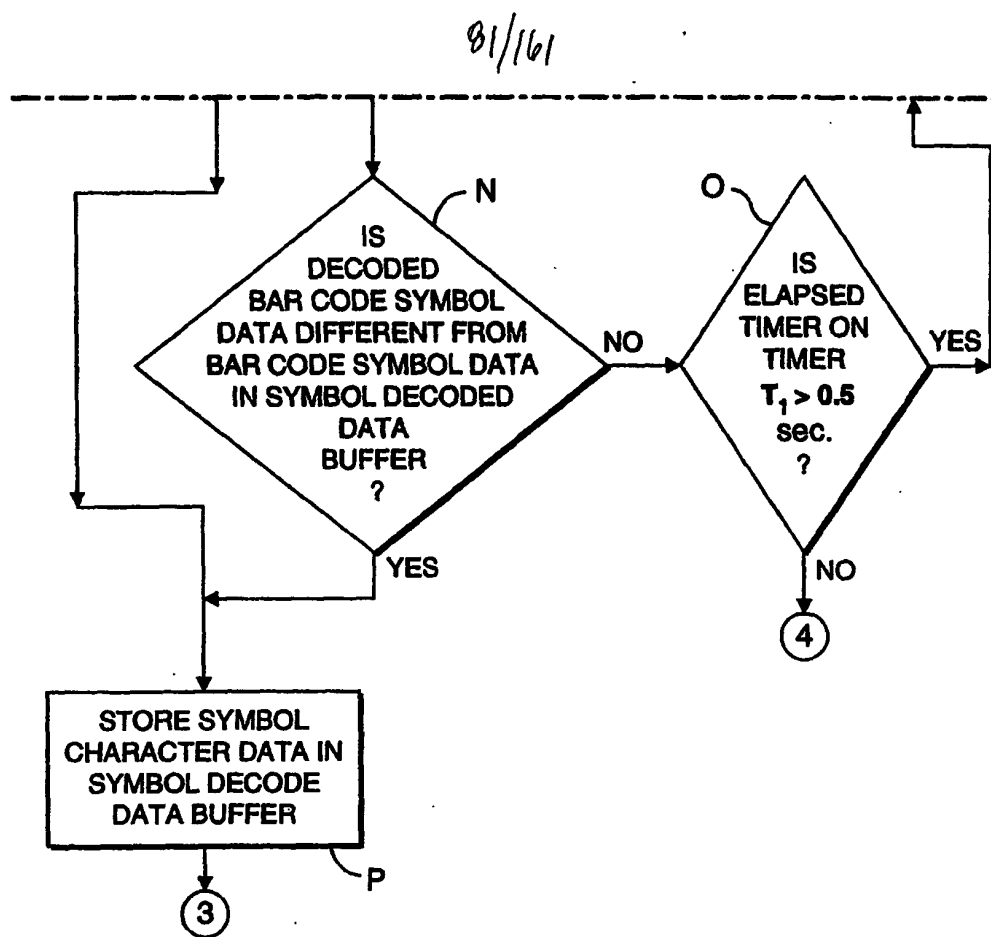


FIG. 27B2

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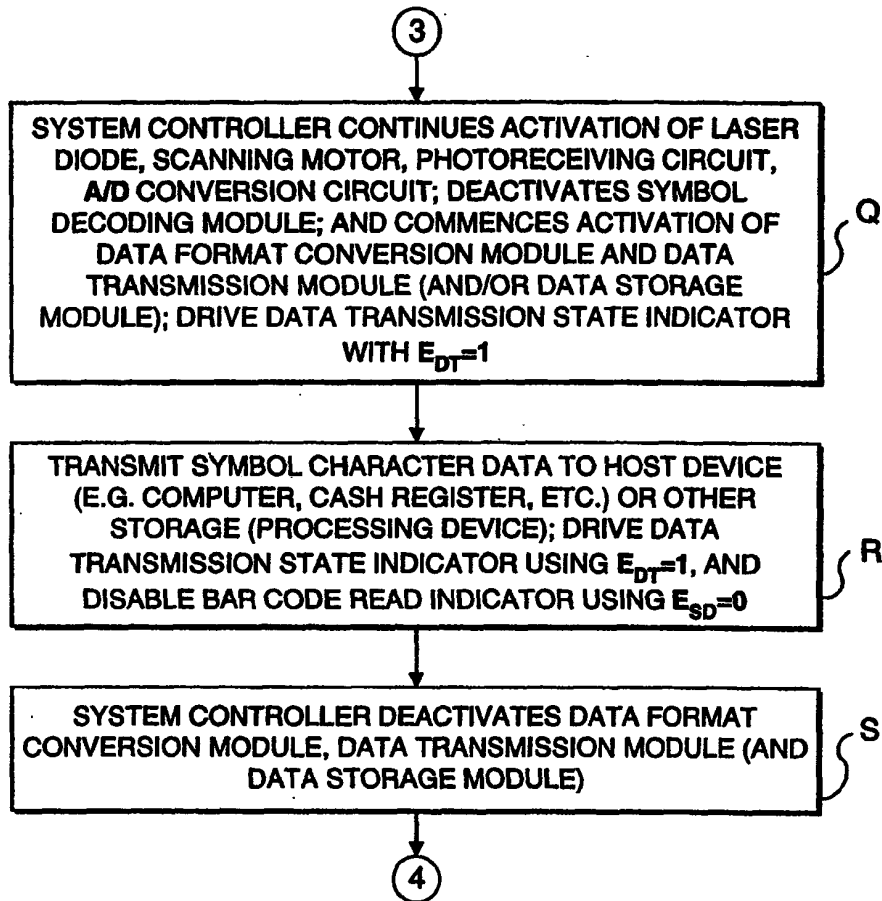
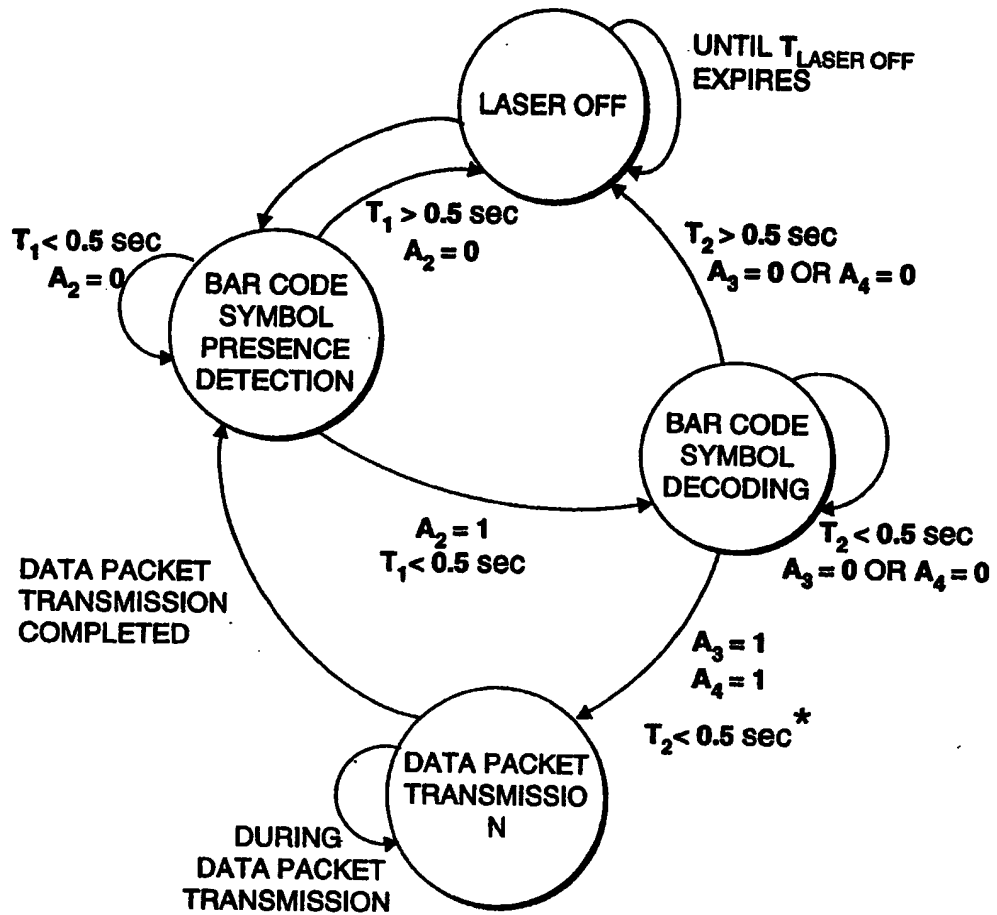


FIG. 27C

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\*: SYMBOL CHARACTER DATA IS DIFFERENT THAN DATA ELEMENT IN DECODED SYMBOL DATA BUFFER

FIG. 28

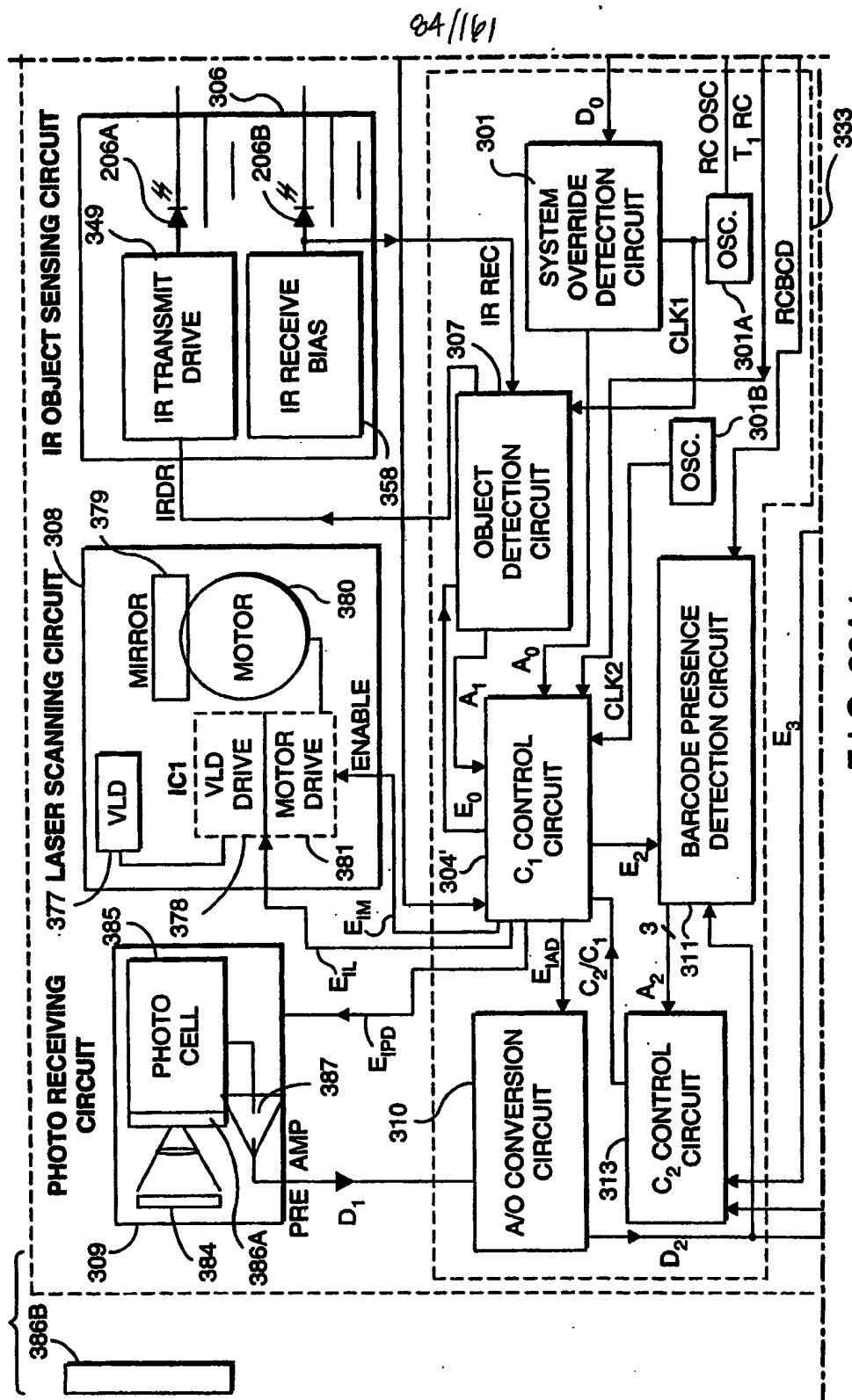


FIG. 29A1

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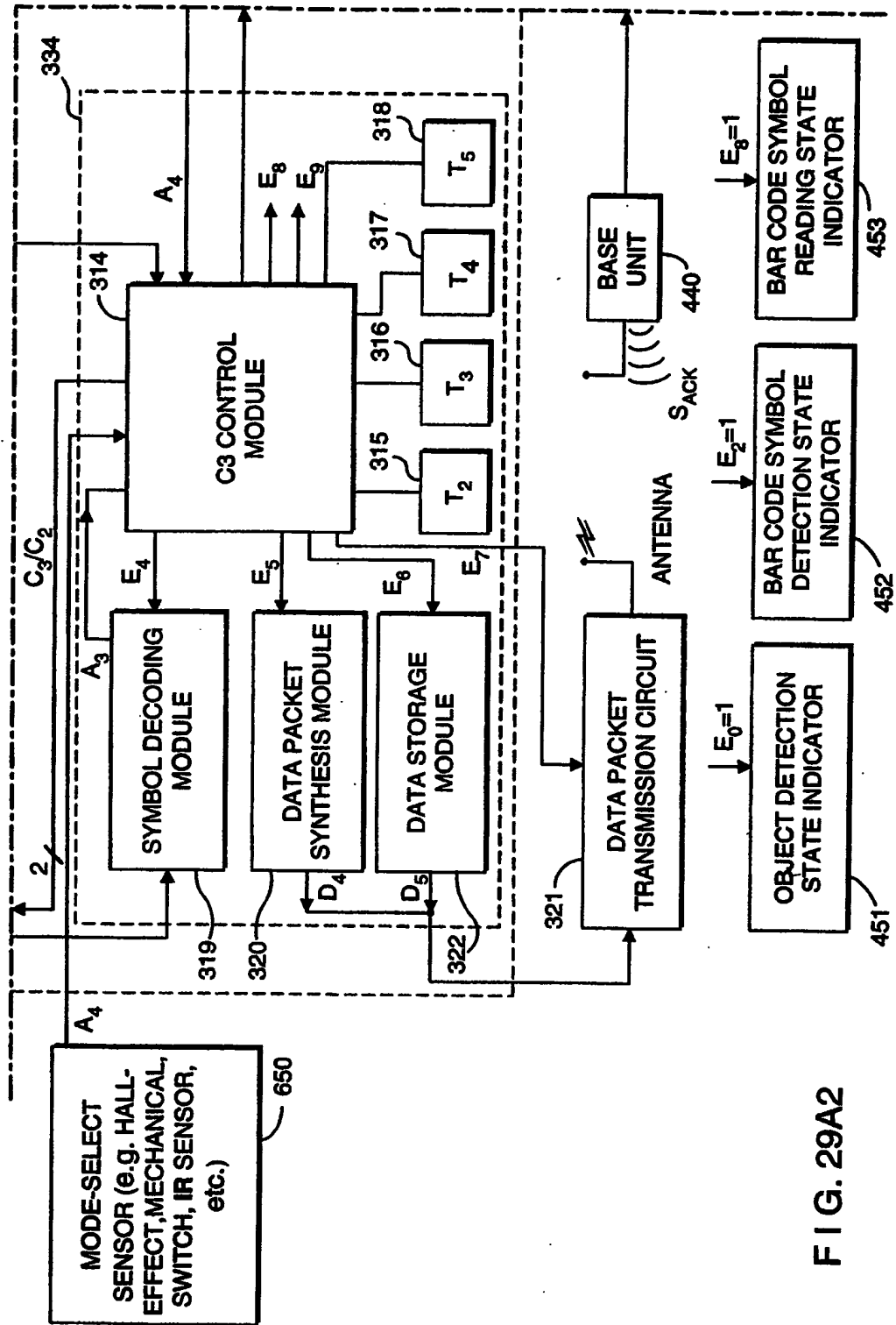


FIG. 29A2

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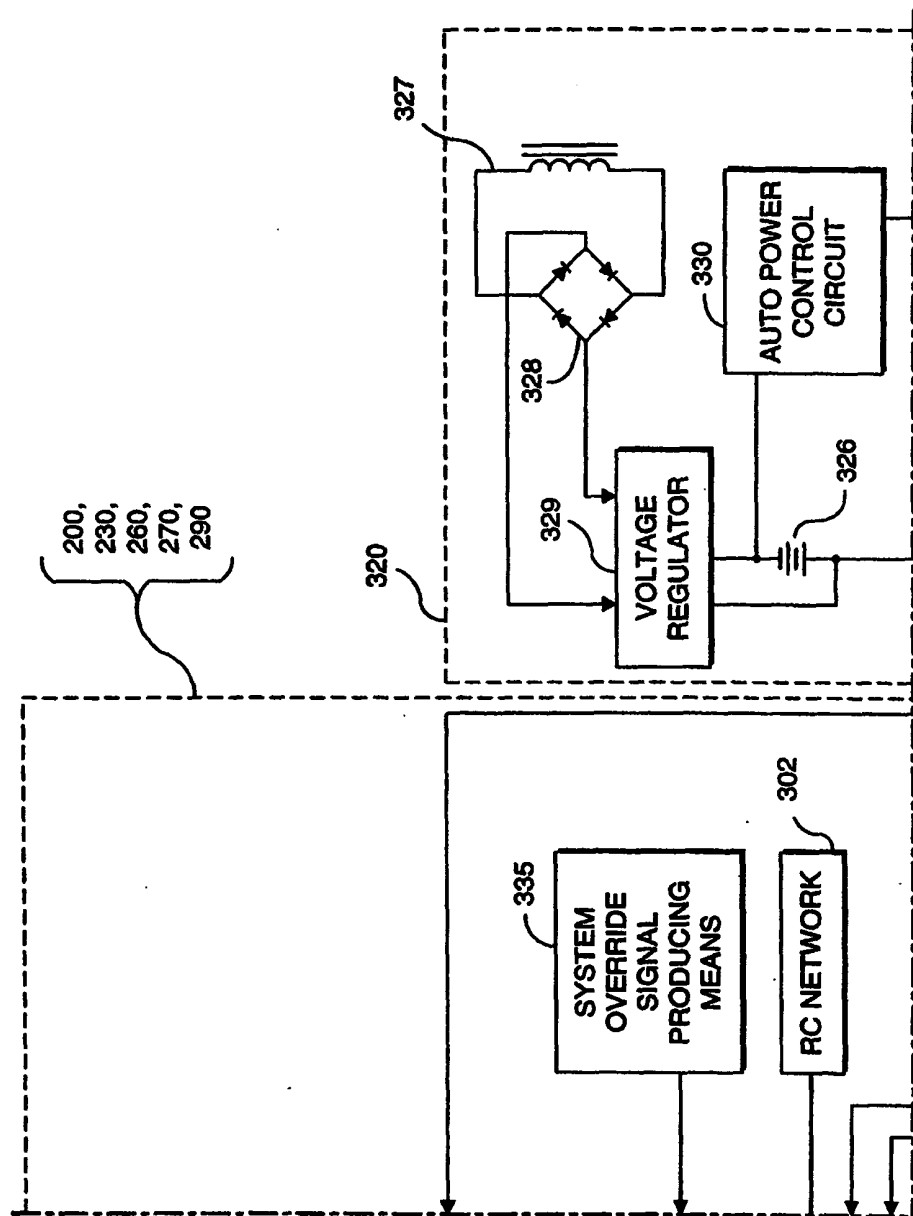


FIG. 29A3

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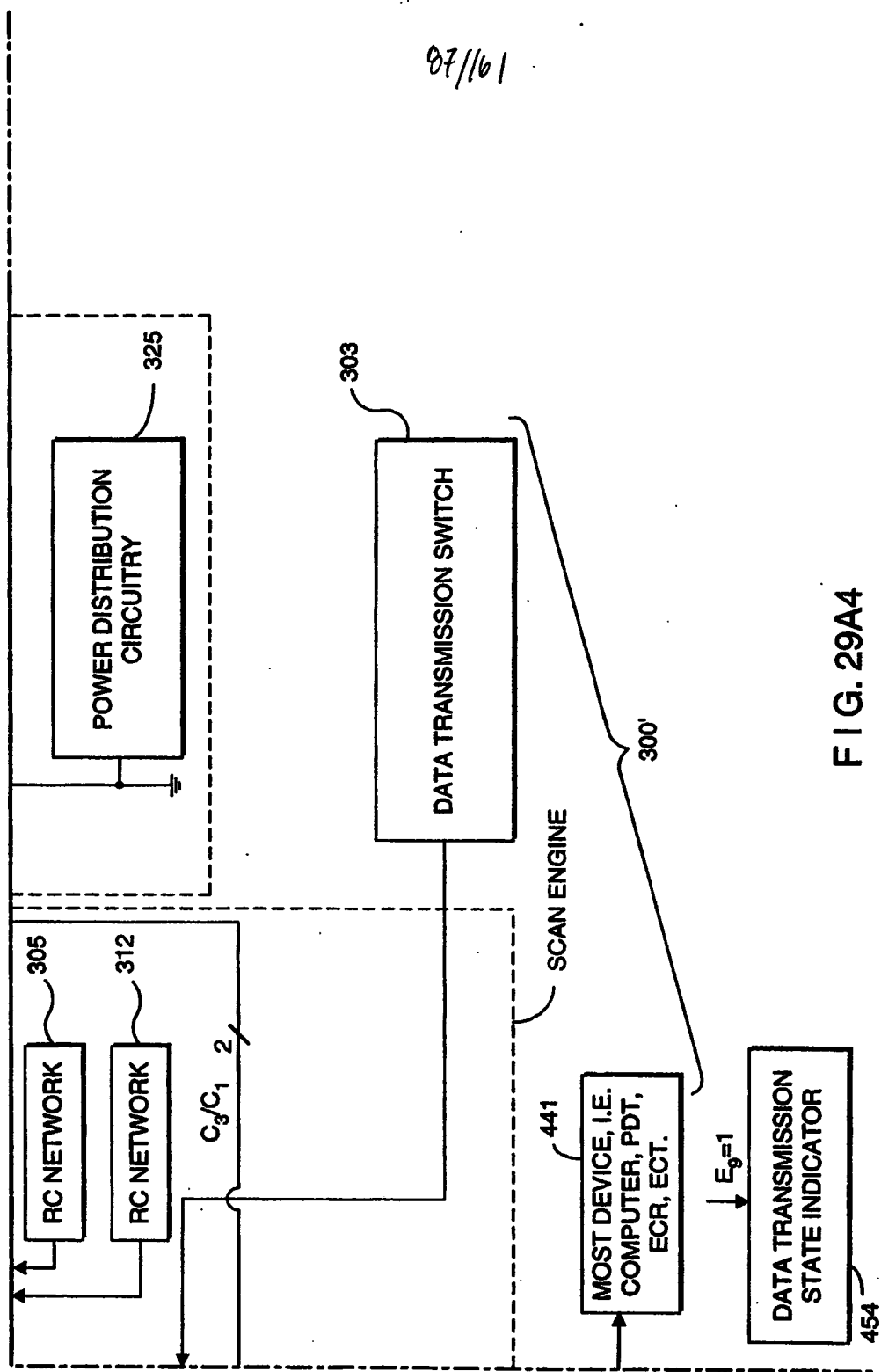


FIG. 29A4

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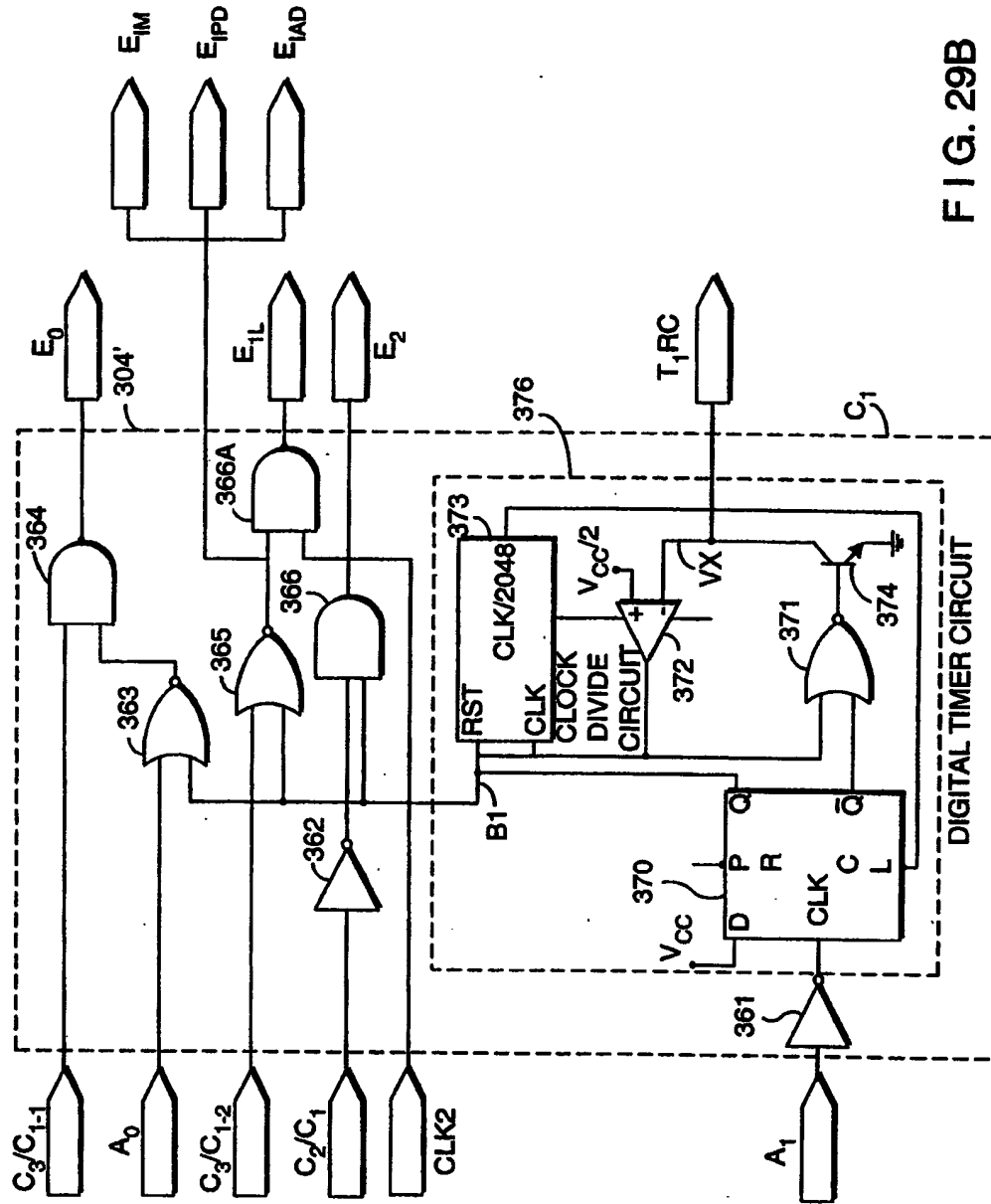


FIG. 29B



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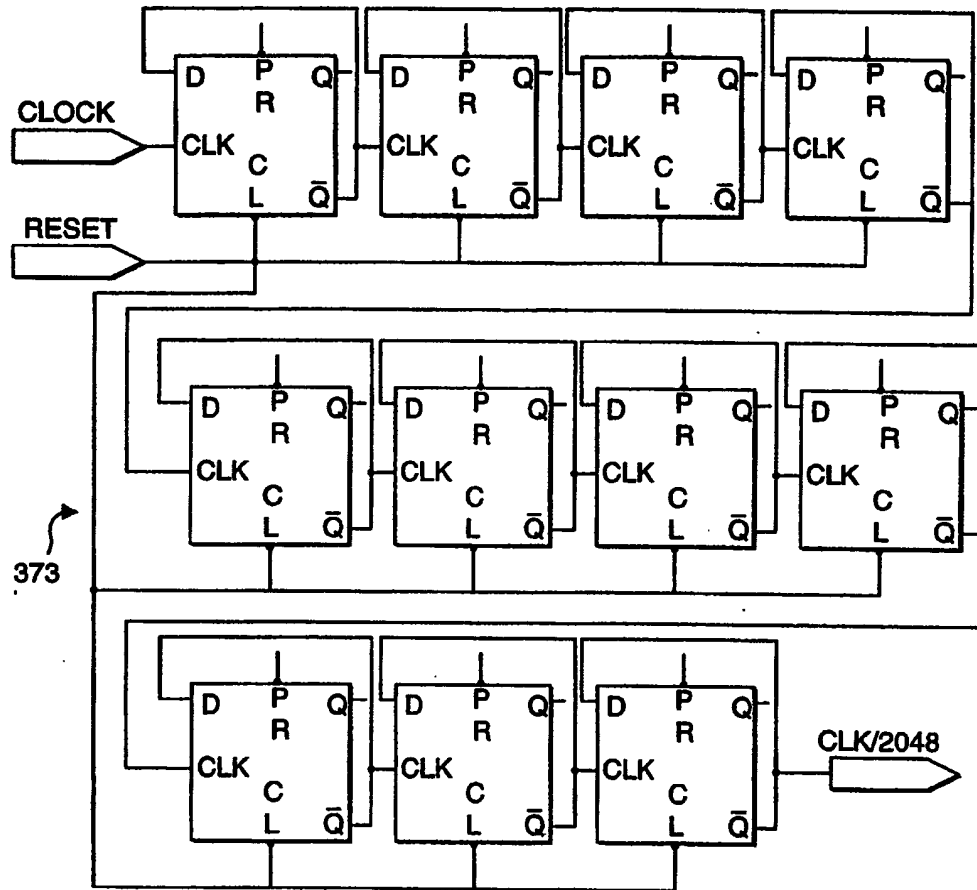


FIG. 29C

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$$\left\{ \begin{array}{l} E_0 = \overline{(B1 + A_0) (C_3 / C_{1-1})} \\ E_{IM} = E_{IPD} = E_{IAD} = \overline{(C_3 / C_{1-2}) + B1} \\ E_L = \overline{[(C_3 / C_{1-1}) + B1]} [B2] \\ E_2 = \overline{(C_2 / C_1) (B1)} \end{array} \right.$$

FIG. 29D

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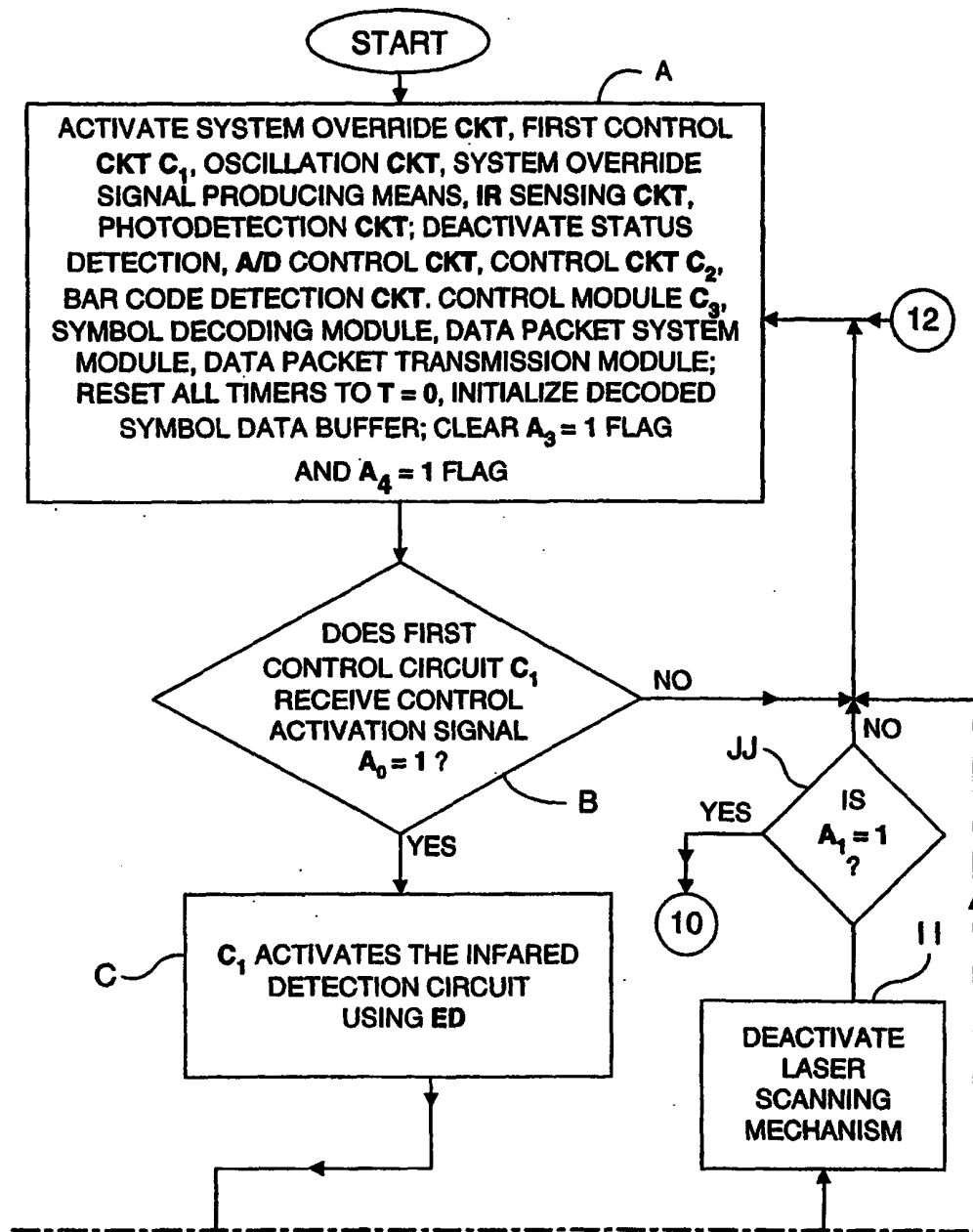
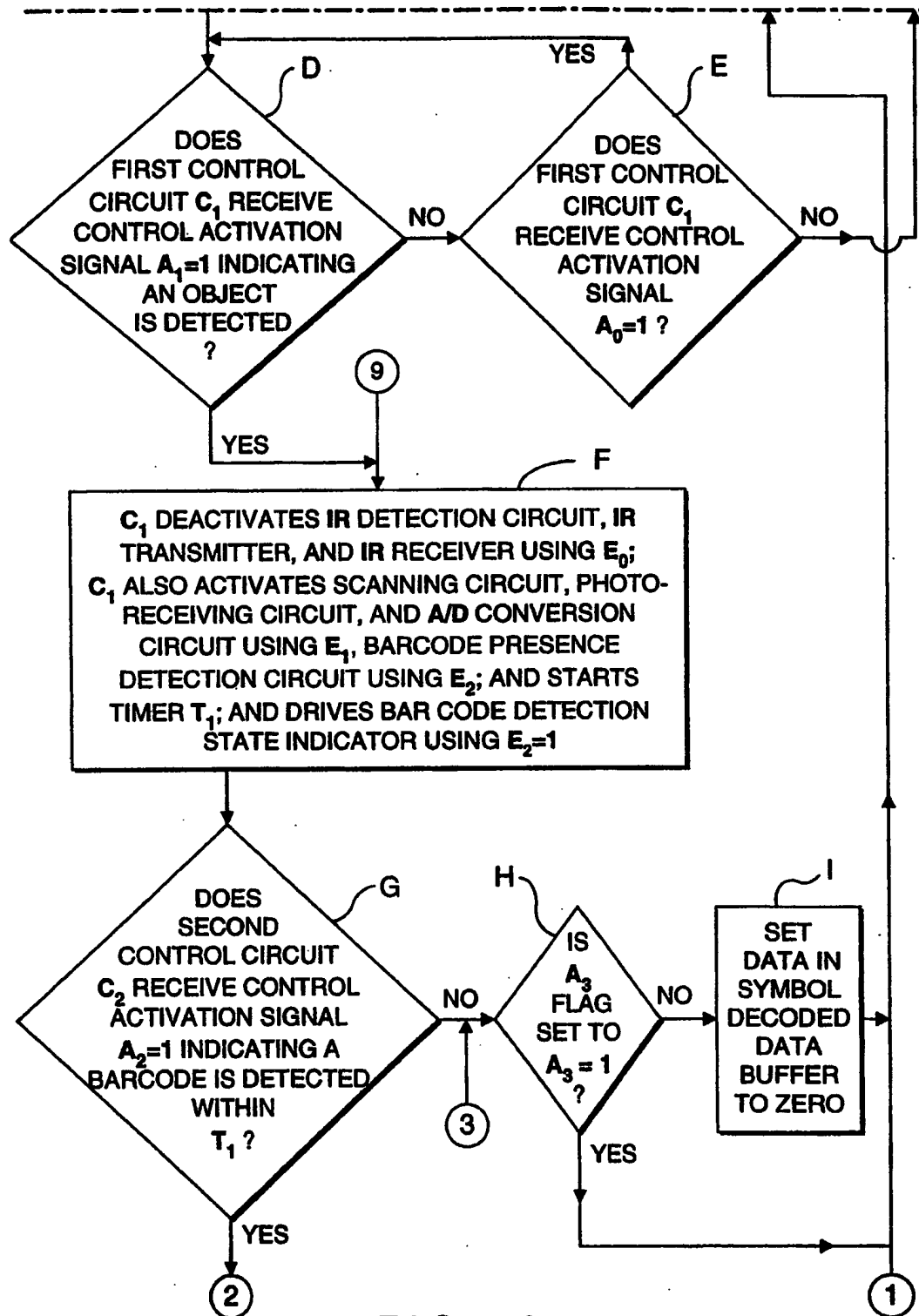


FIG. 30A1



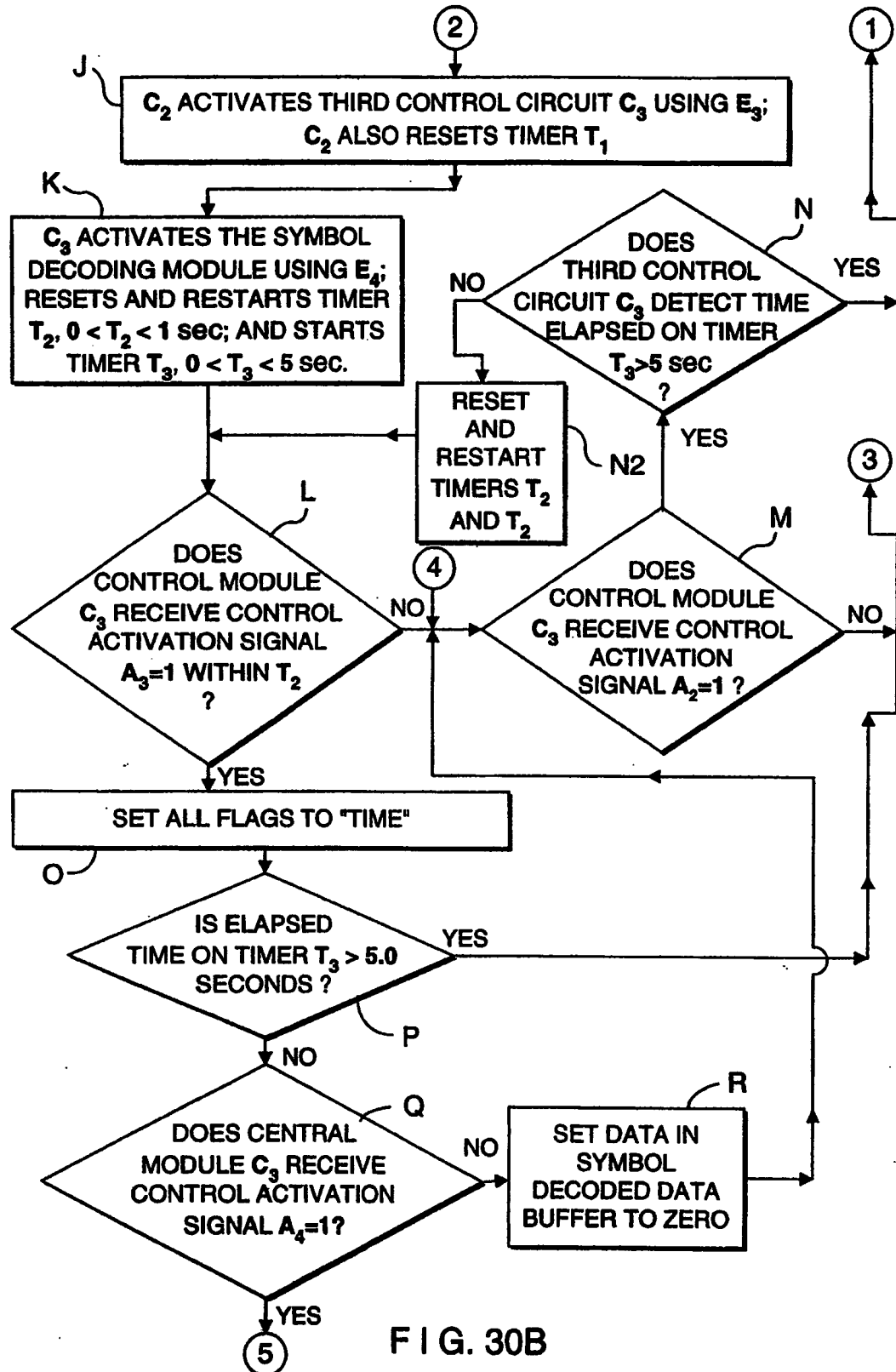


FIG. 30B

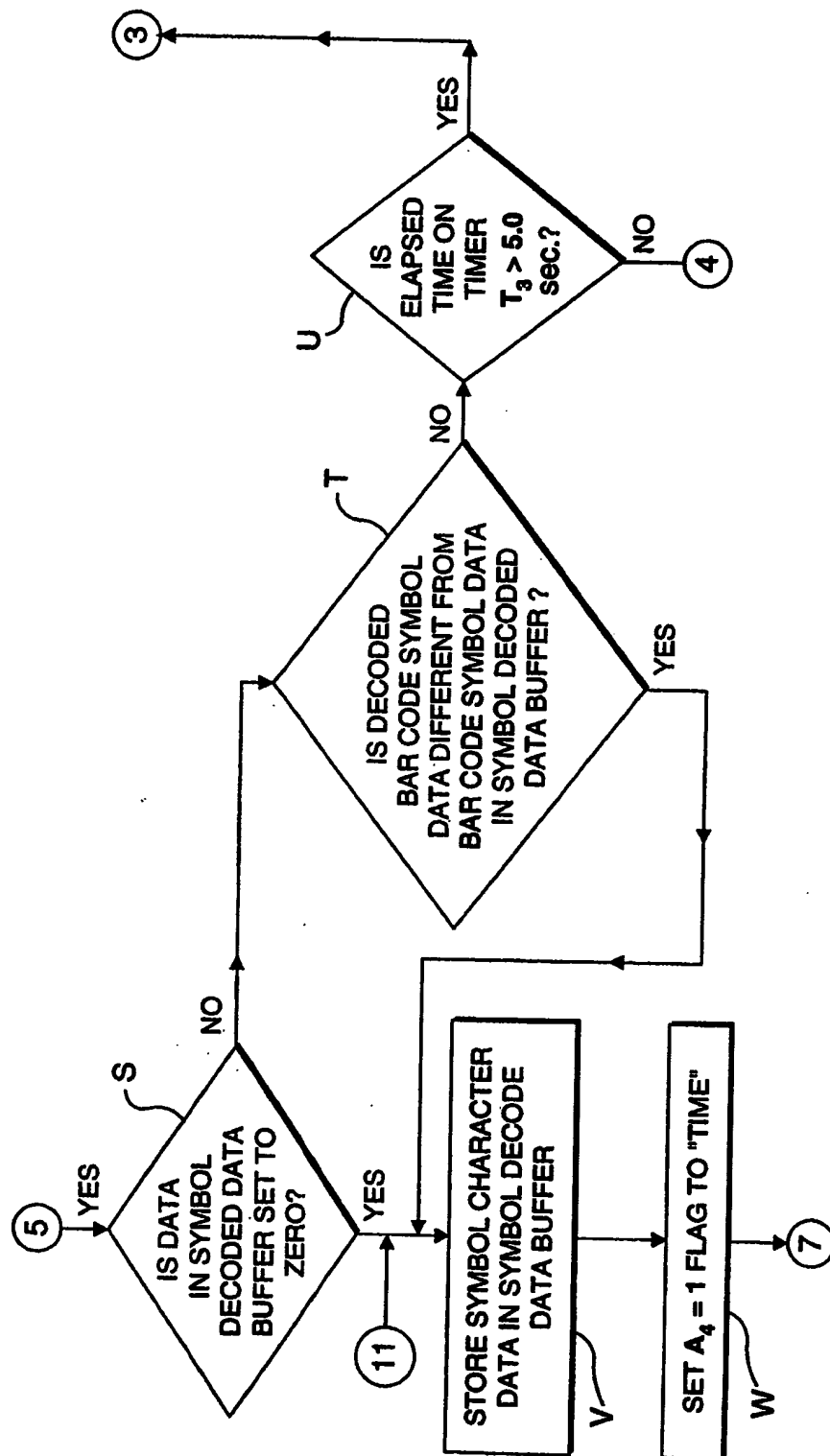


FIG. 30C

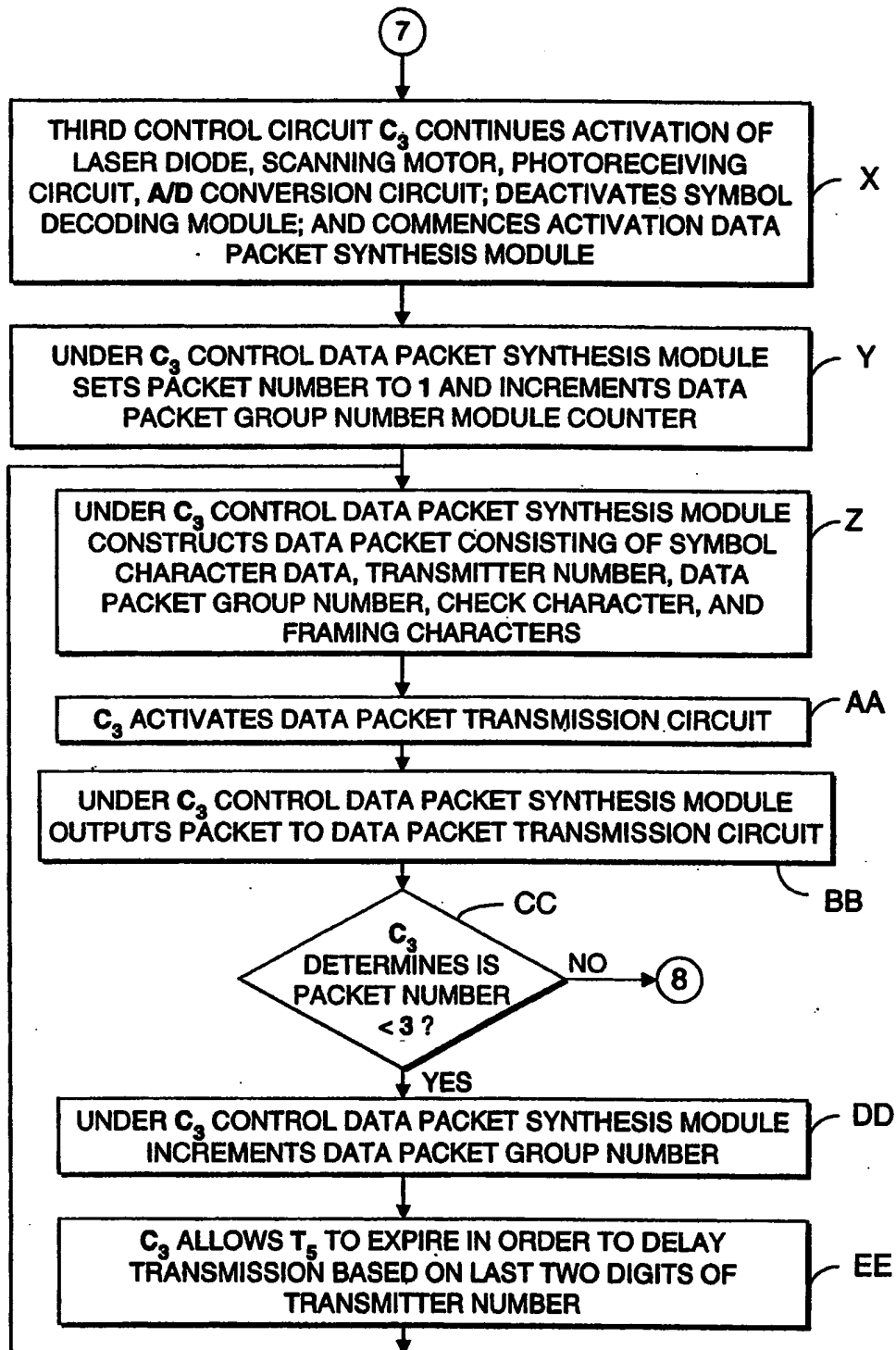


FIG. 30D

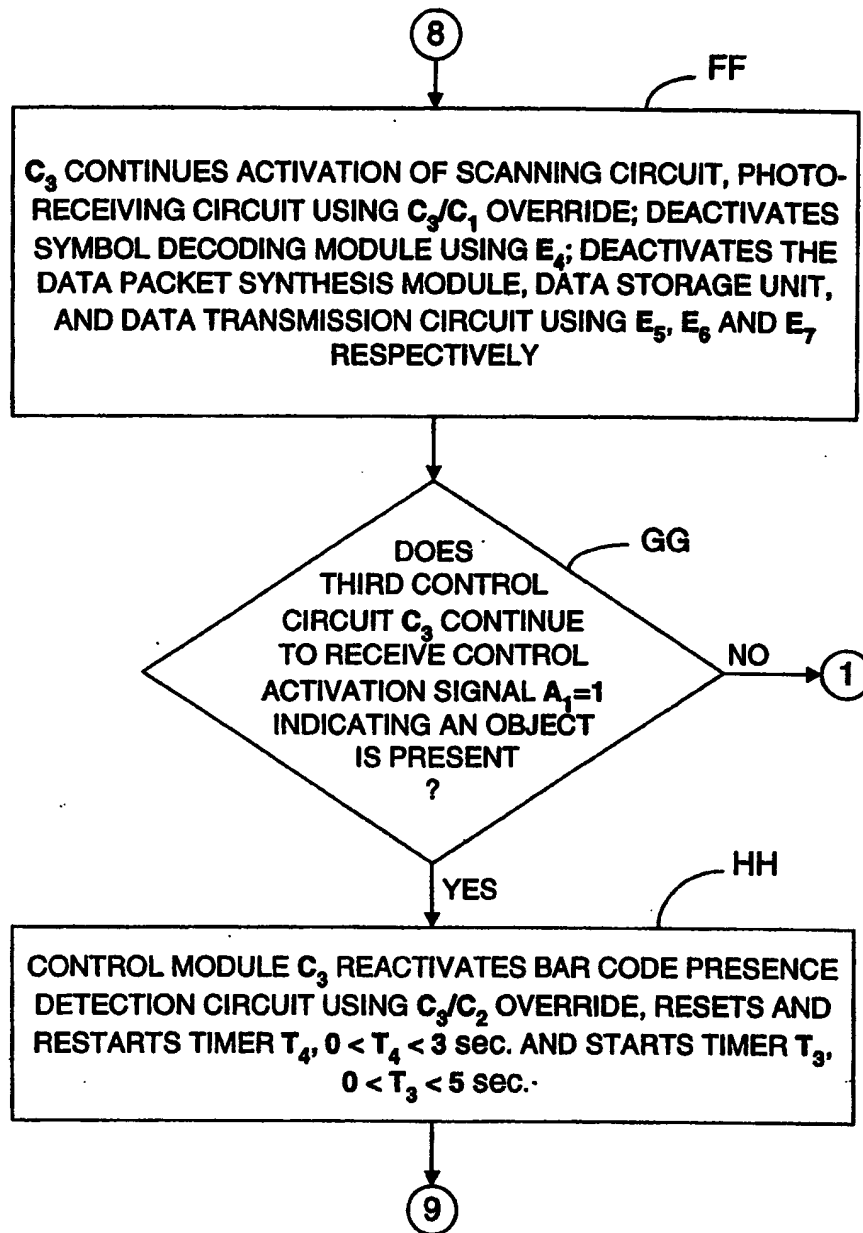


FIG. 30E



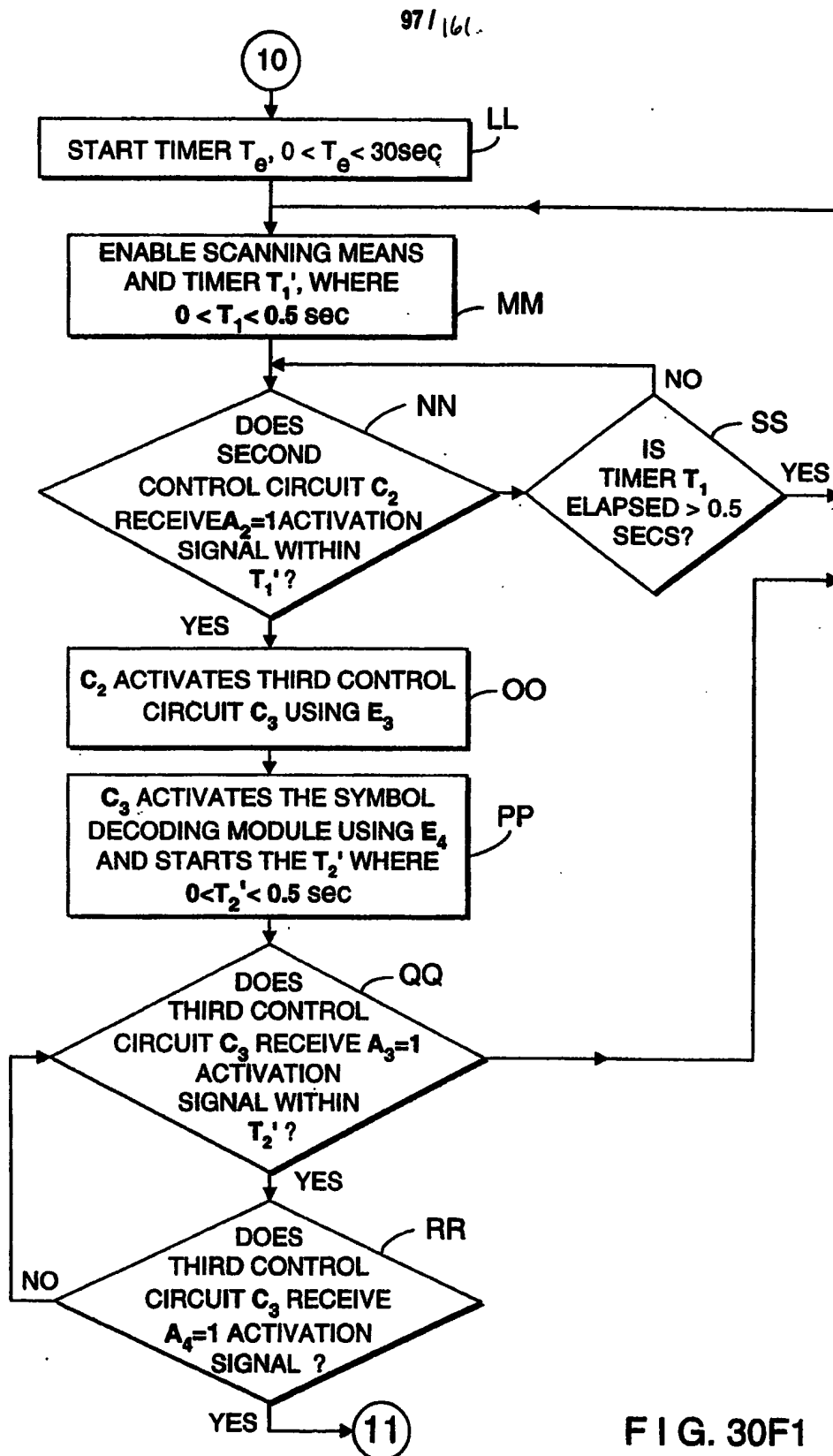
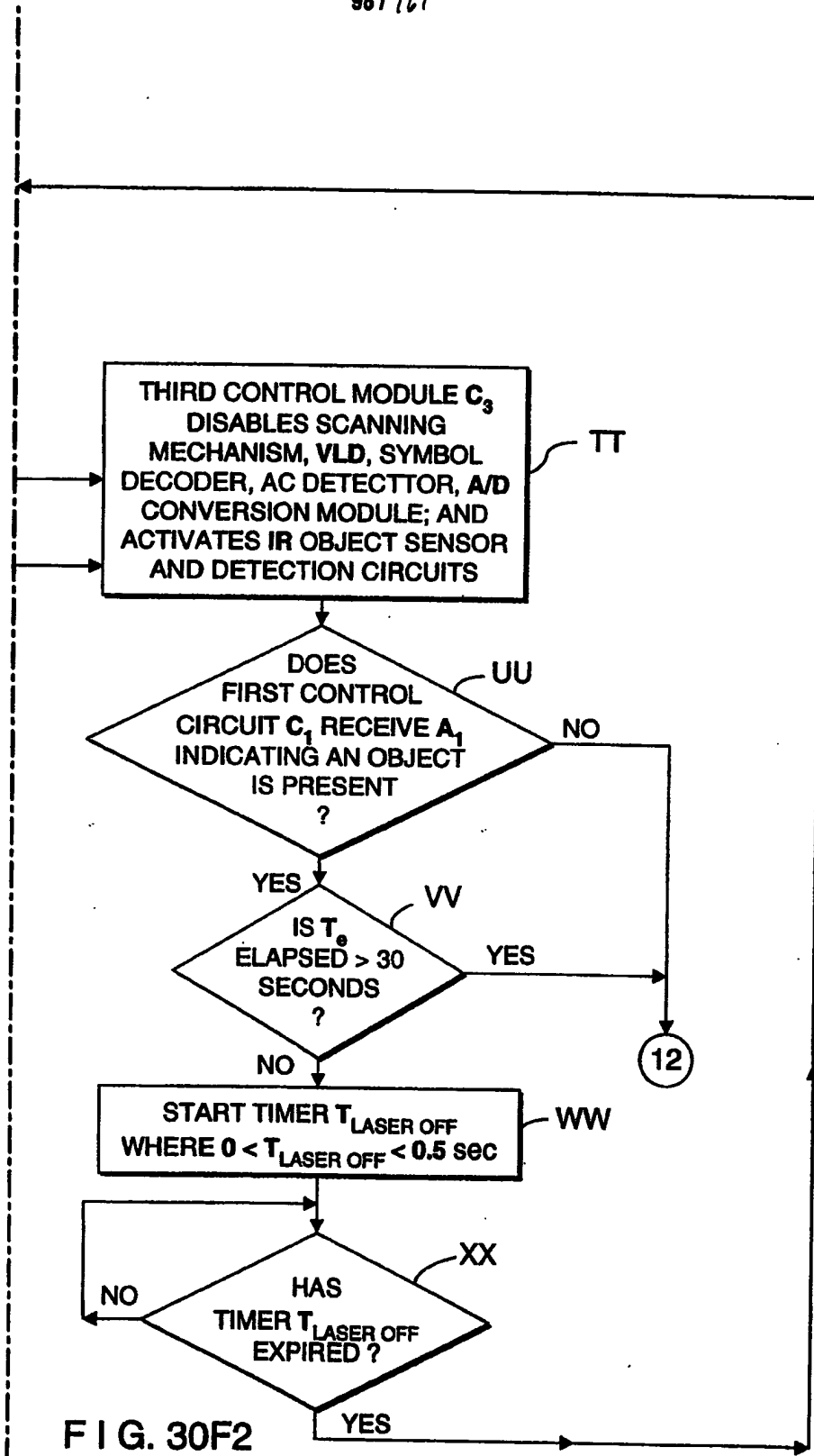


FIG. 30F1



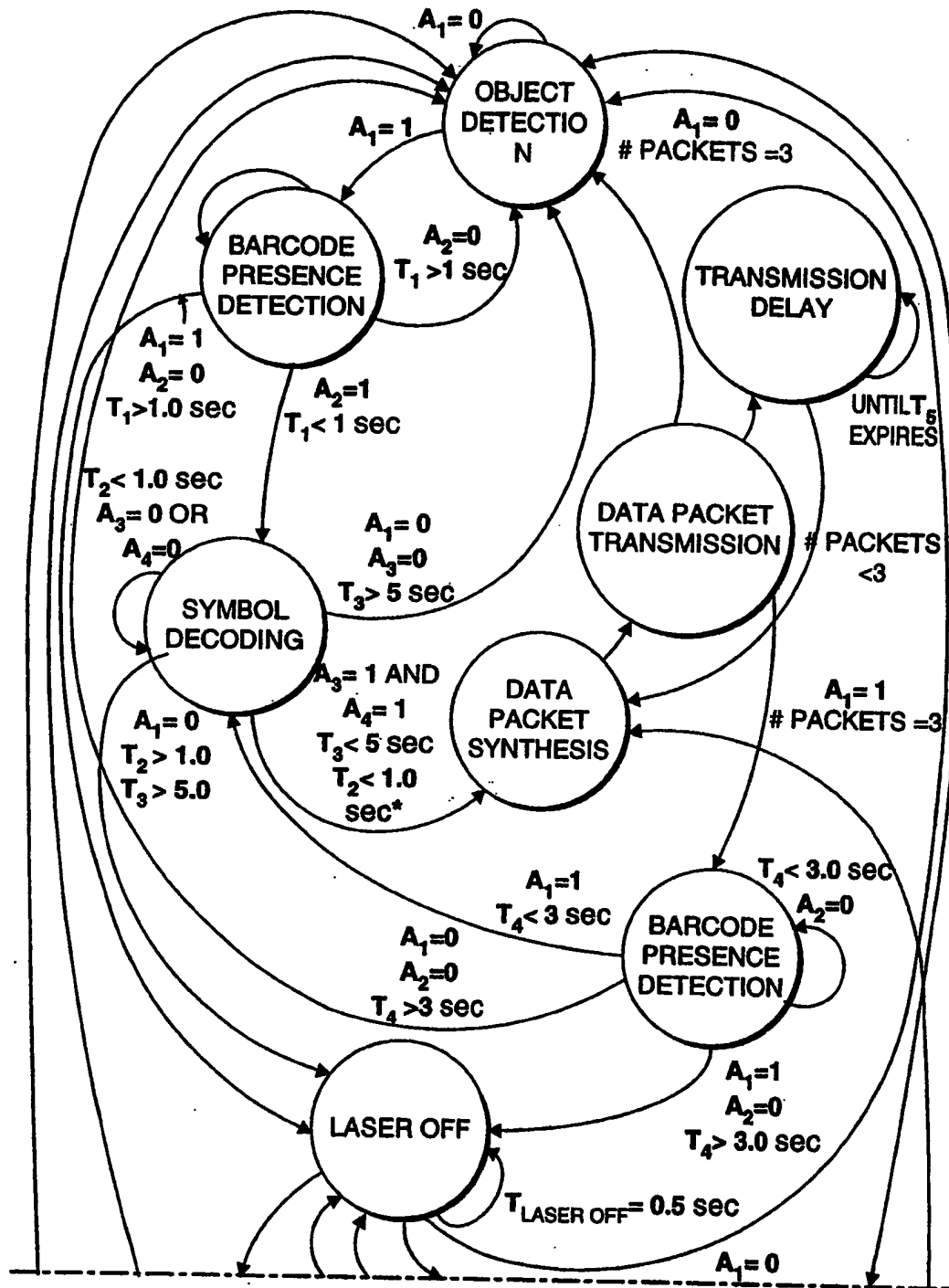
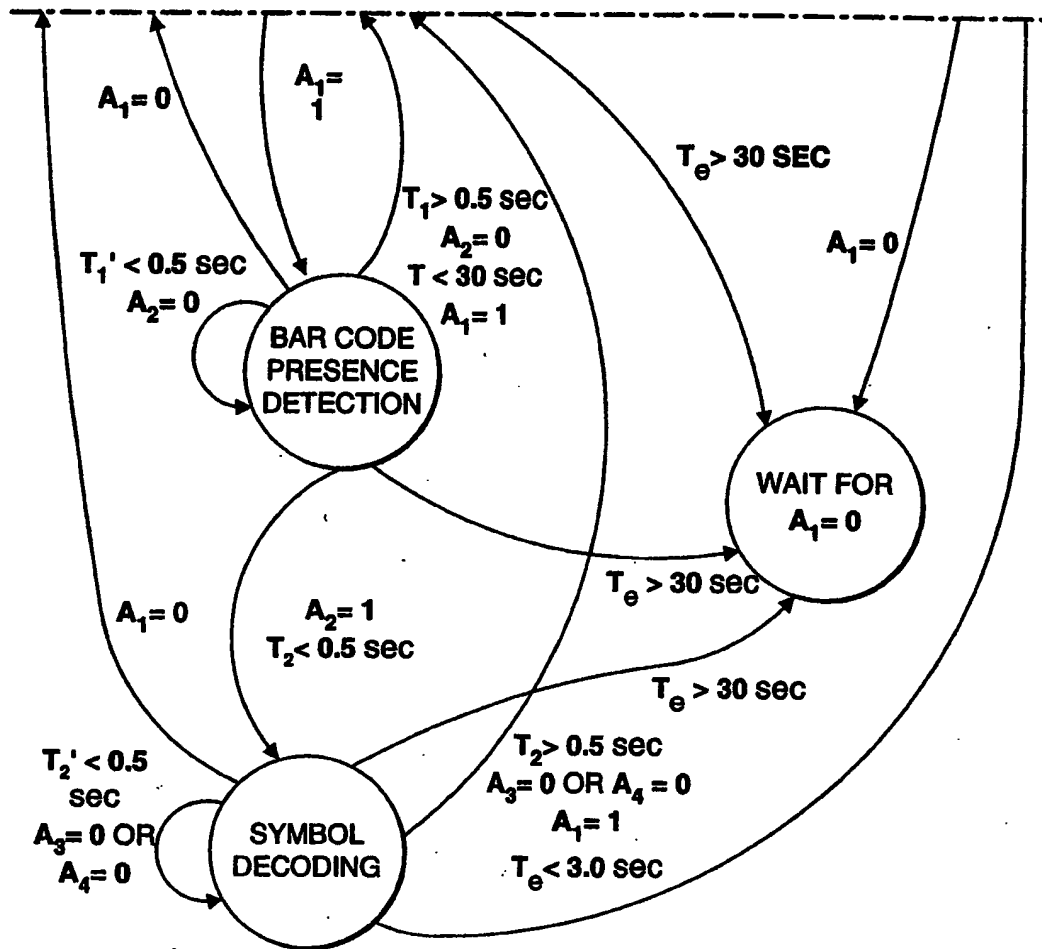


FIG. 31A



$A_3 = 1, A_4 = 1$   
 $T_2' < 0.5 \text{ sec}$

\*: SYMBOL CHARACTER  
 DATA IS DIFFERENT  
 THAN DATA ELEMENT IN  
 DECODED SYMBOL  
 DATA BUFFER

FIG. 31B

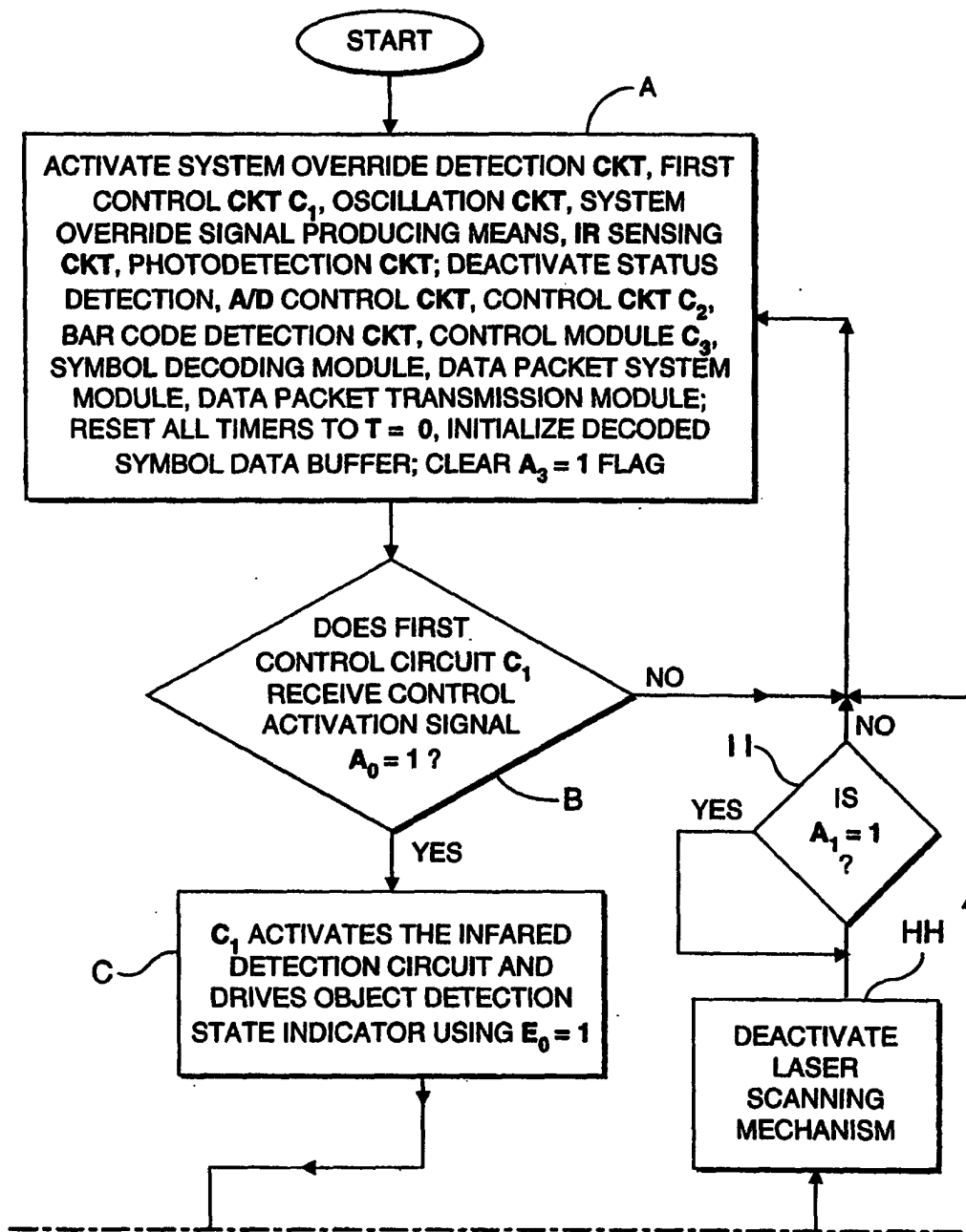


FIG. 32A1

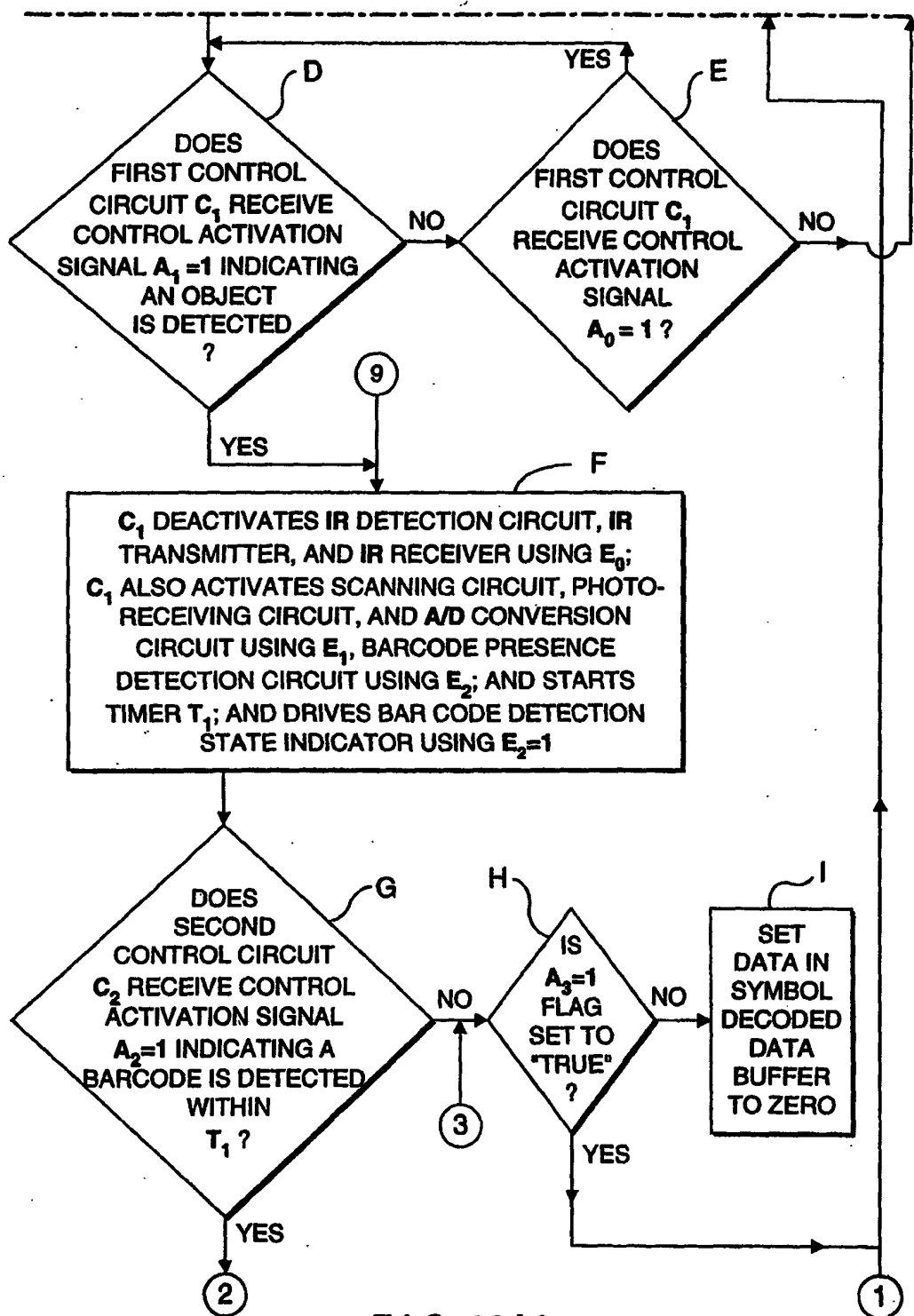


FIG. 32A2

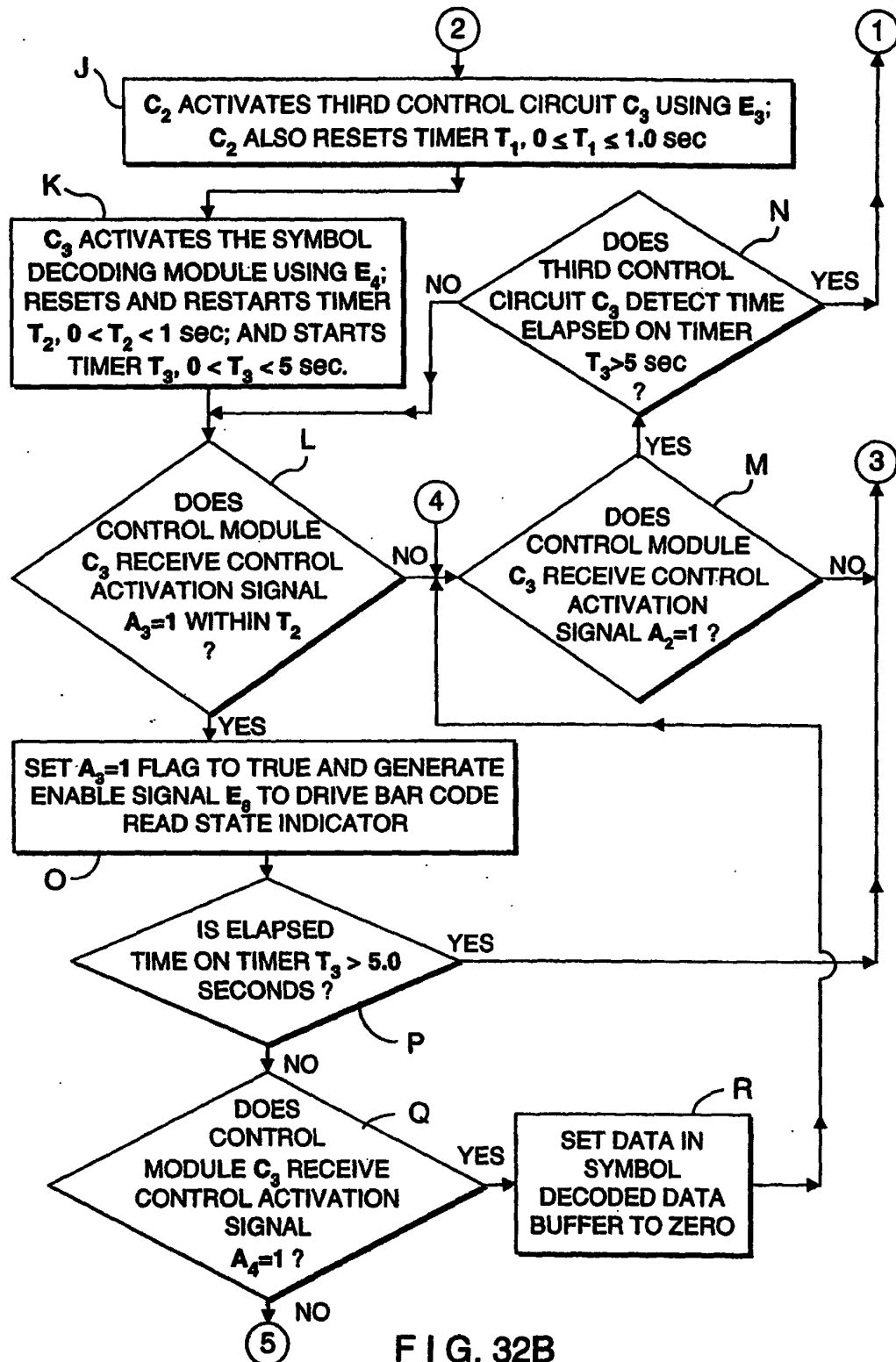


FIG. 32B

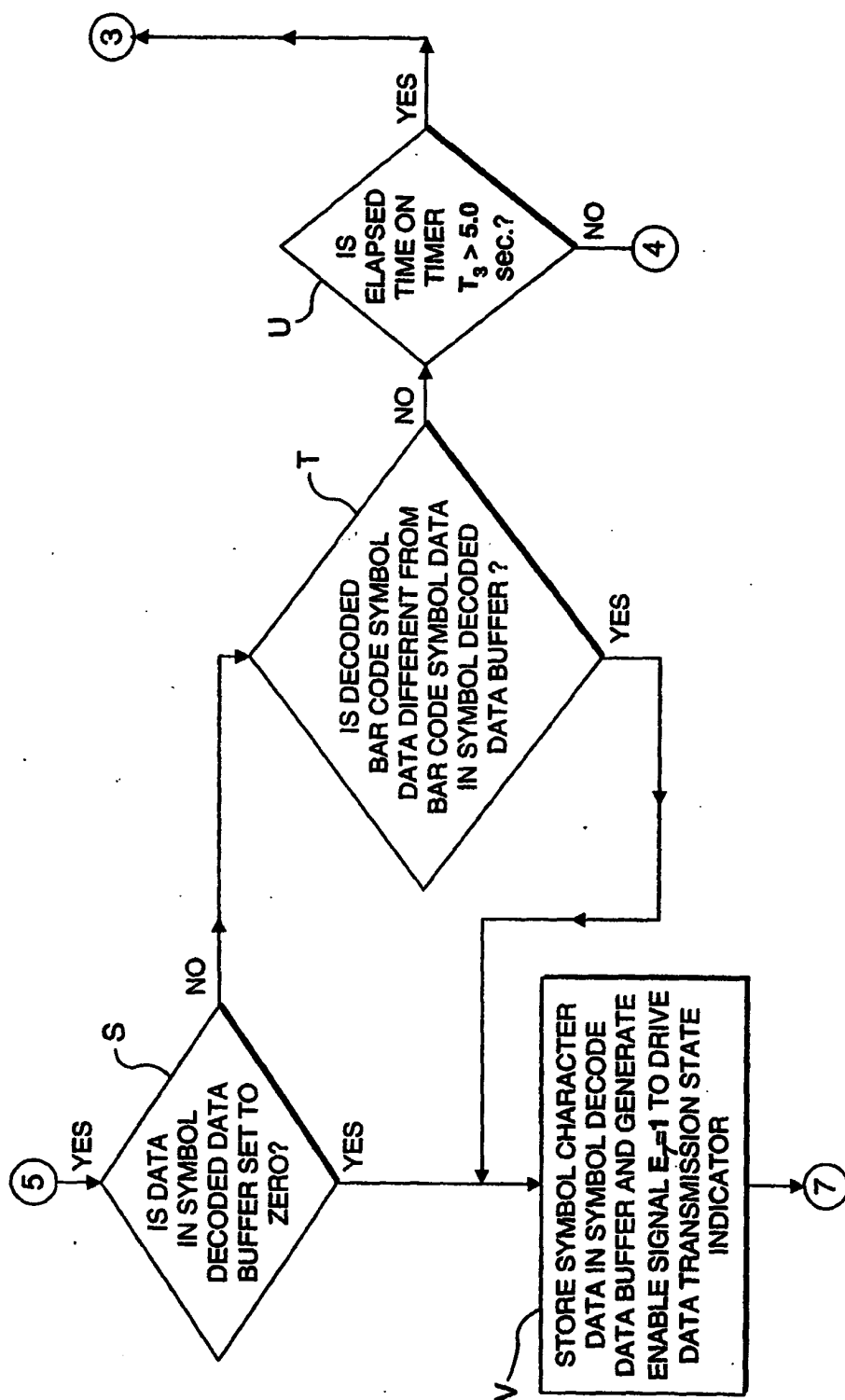


FIG. 32C



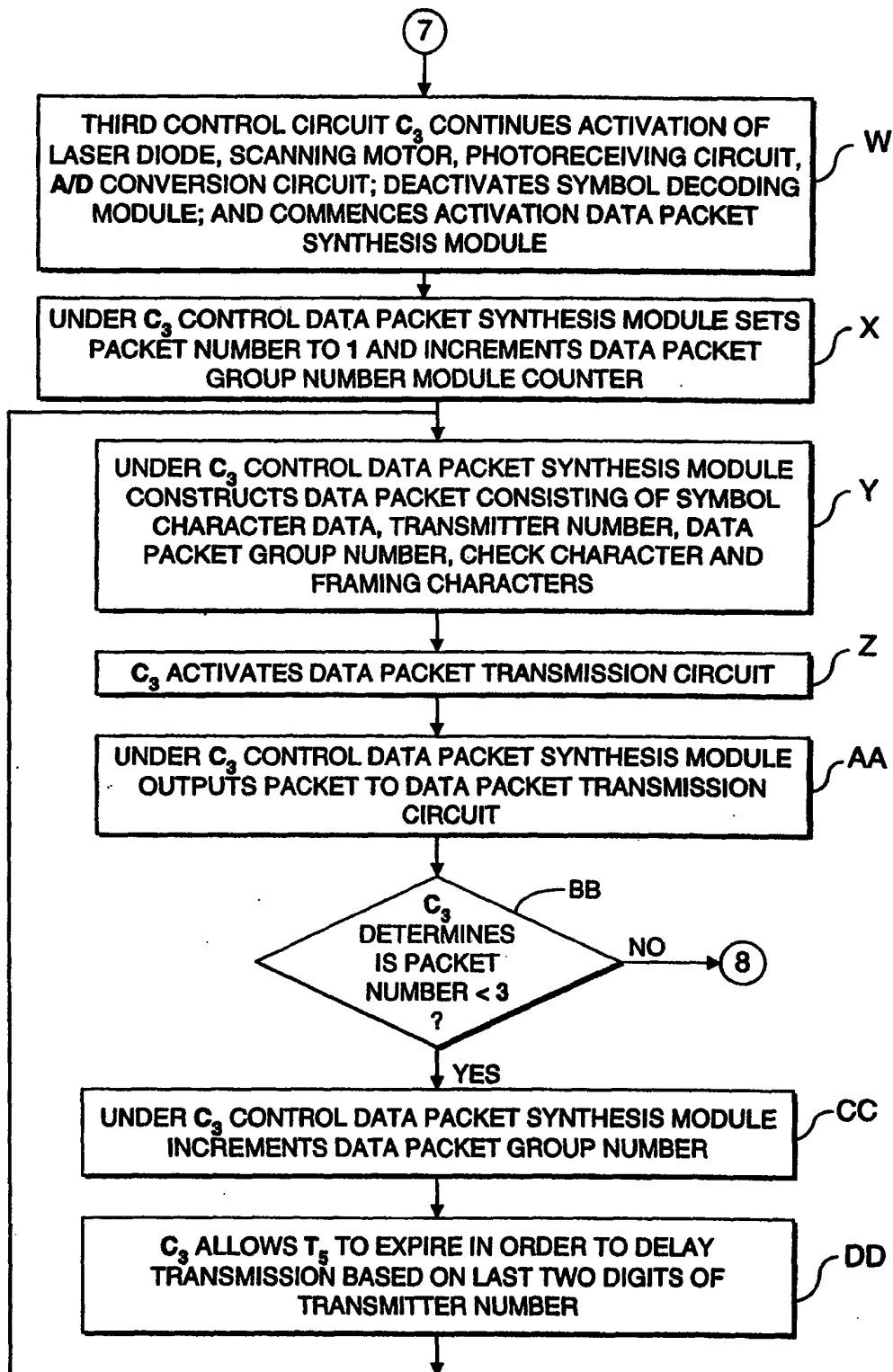


FIG. 32D

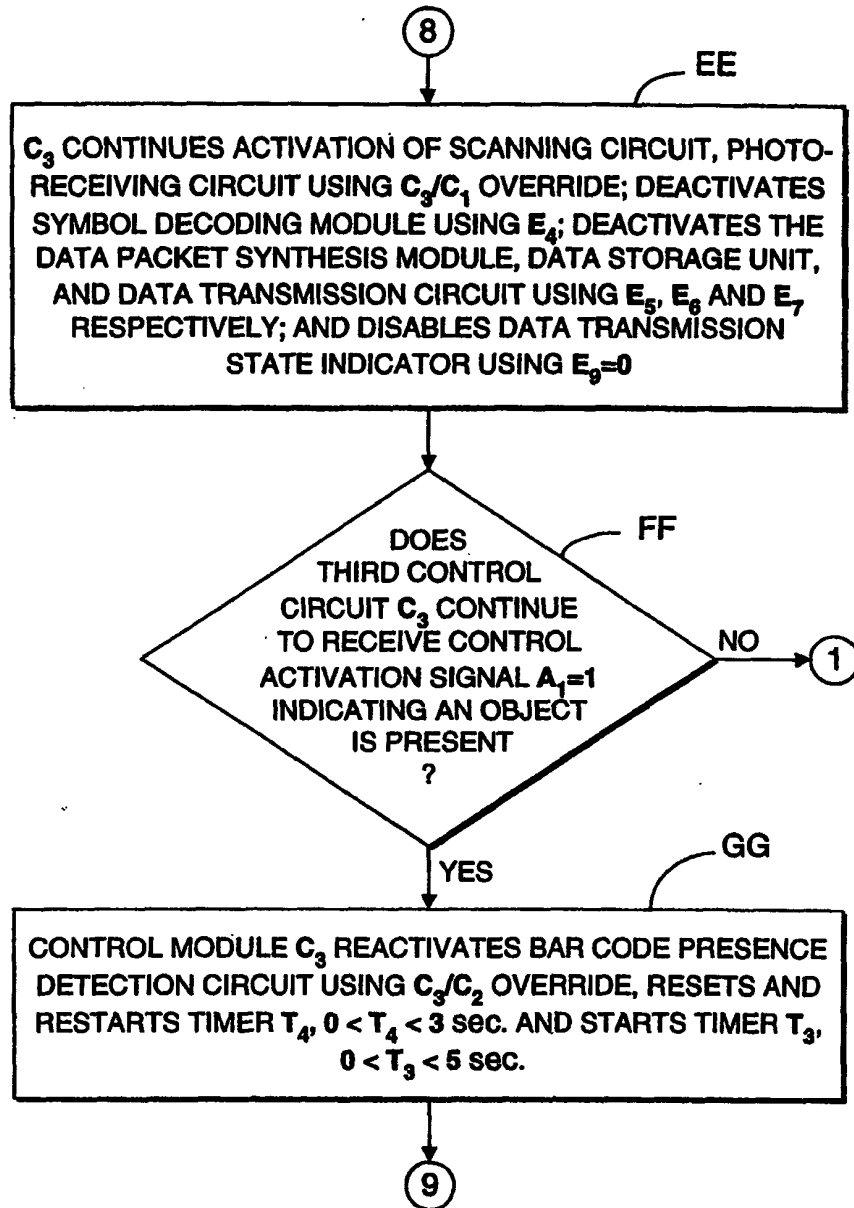


FIG. 32E

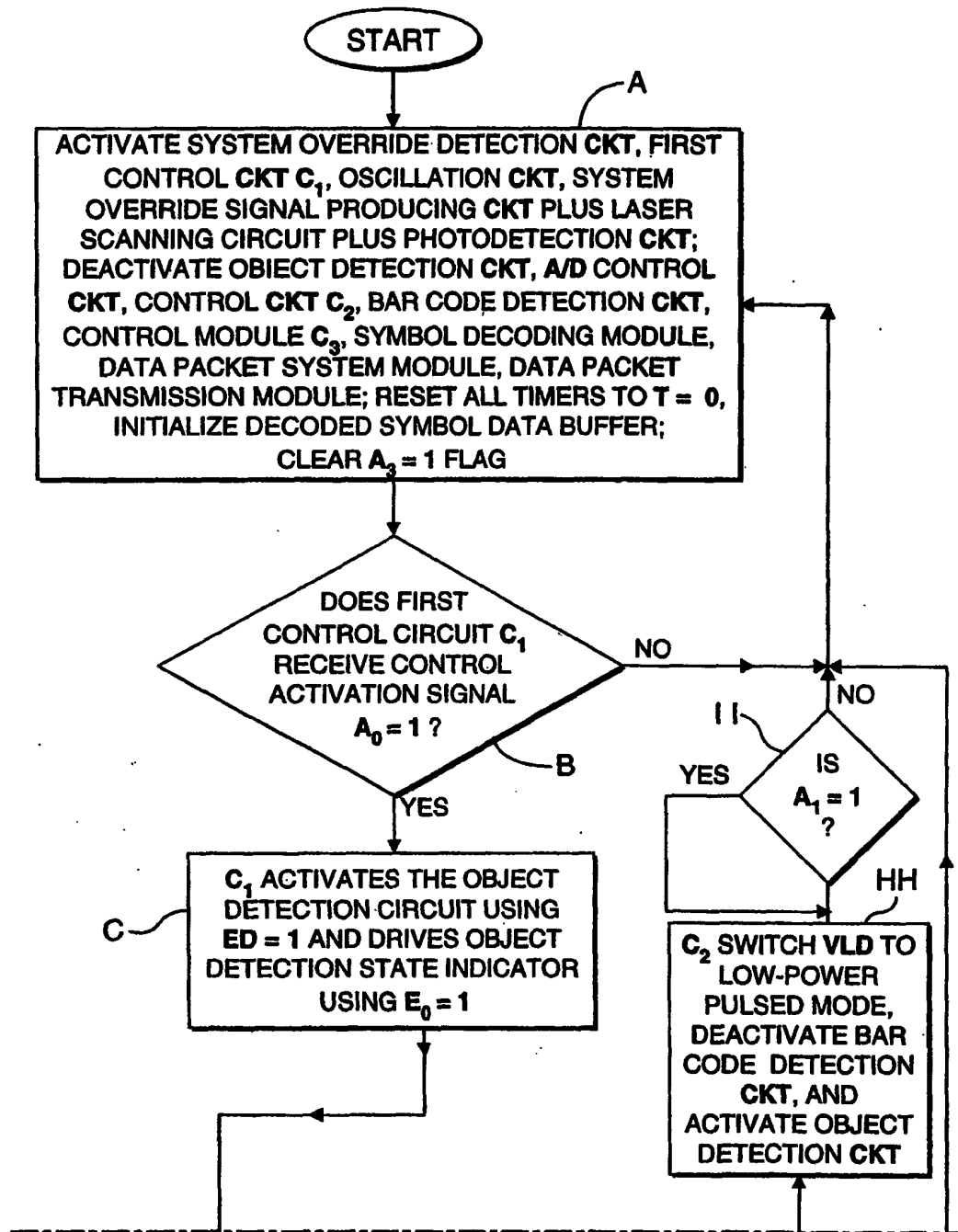


FIG. 33A1

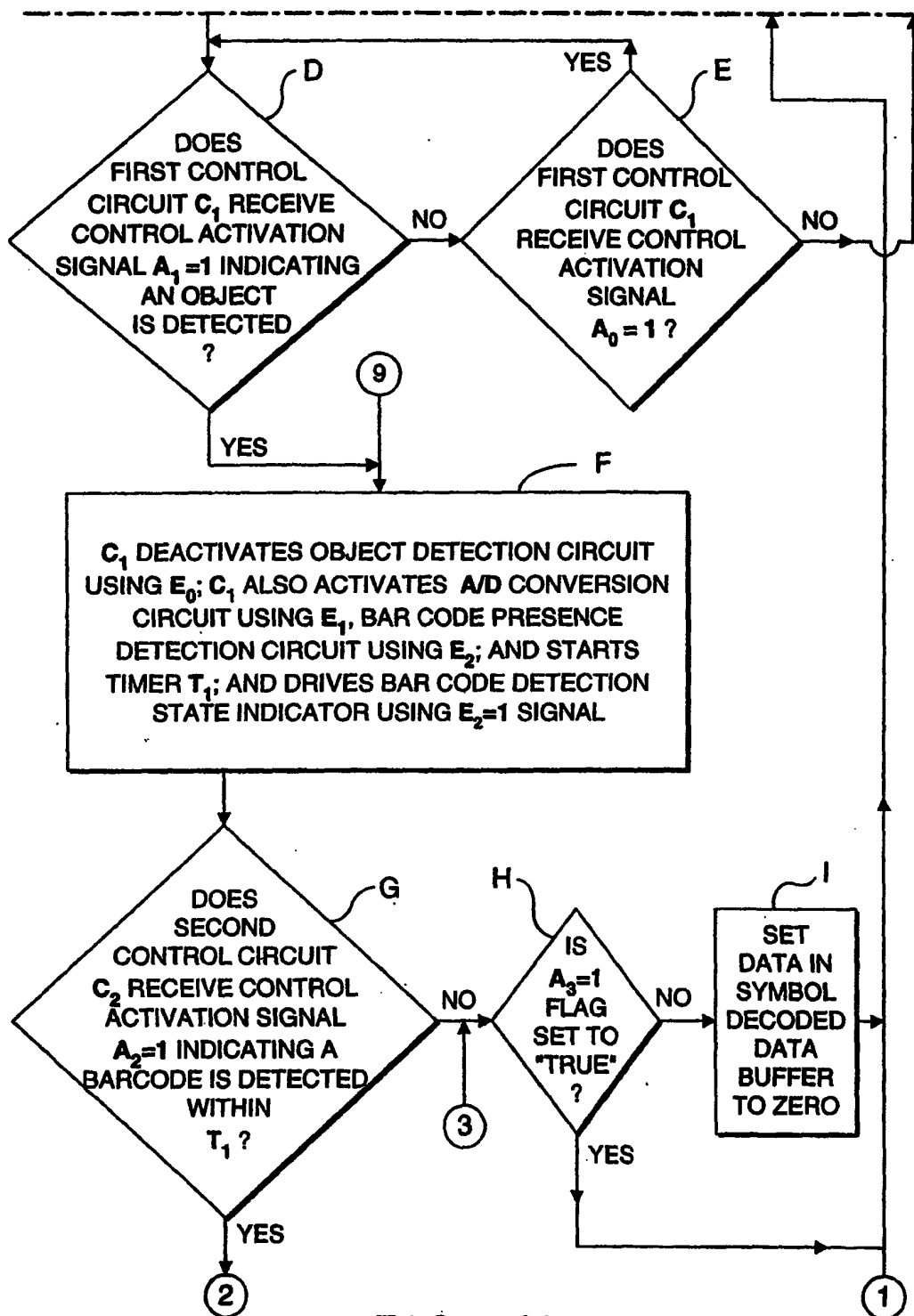
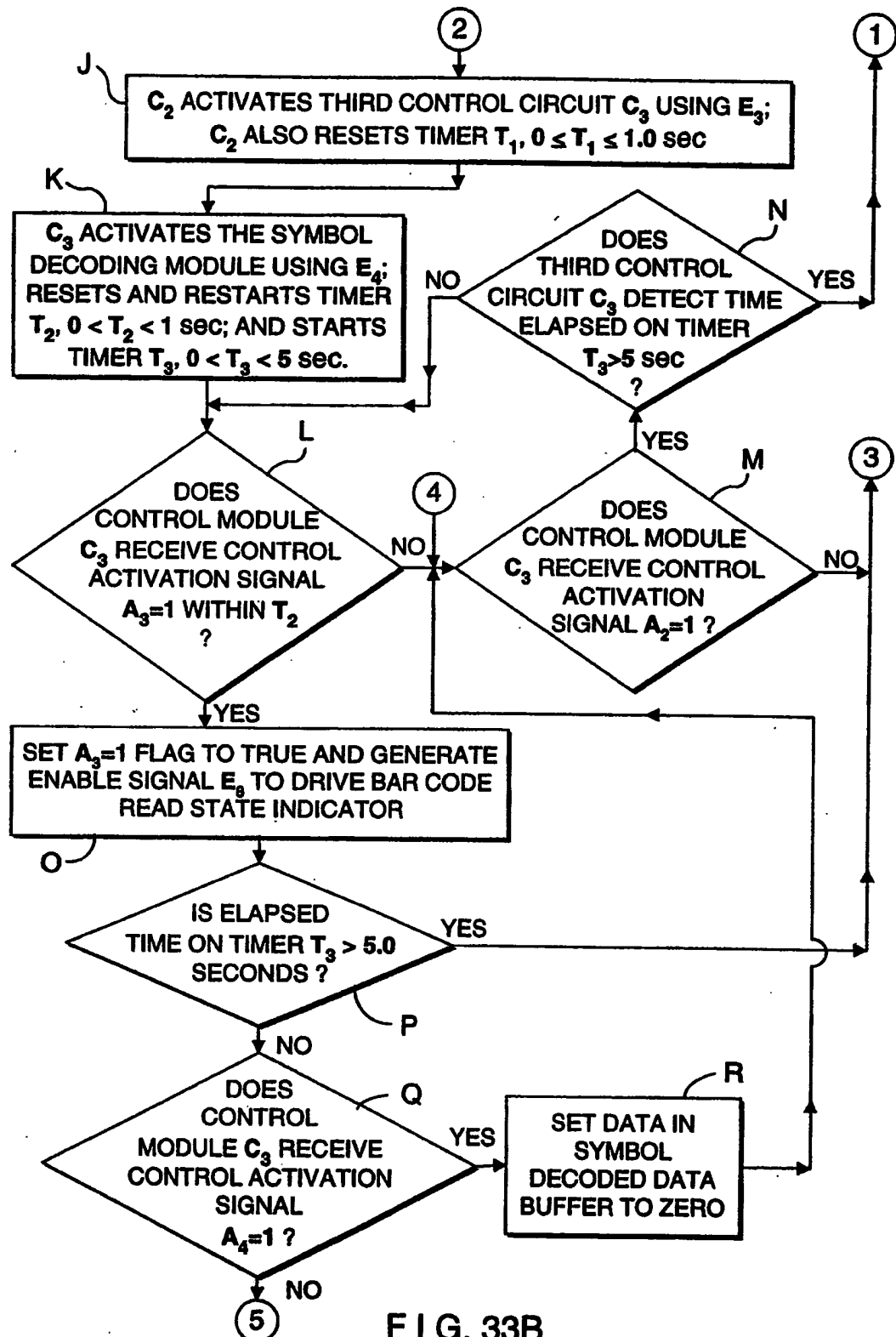


FIG. 33A2



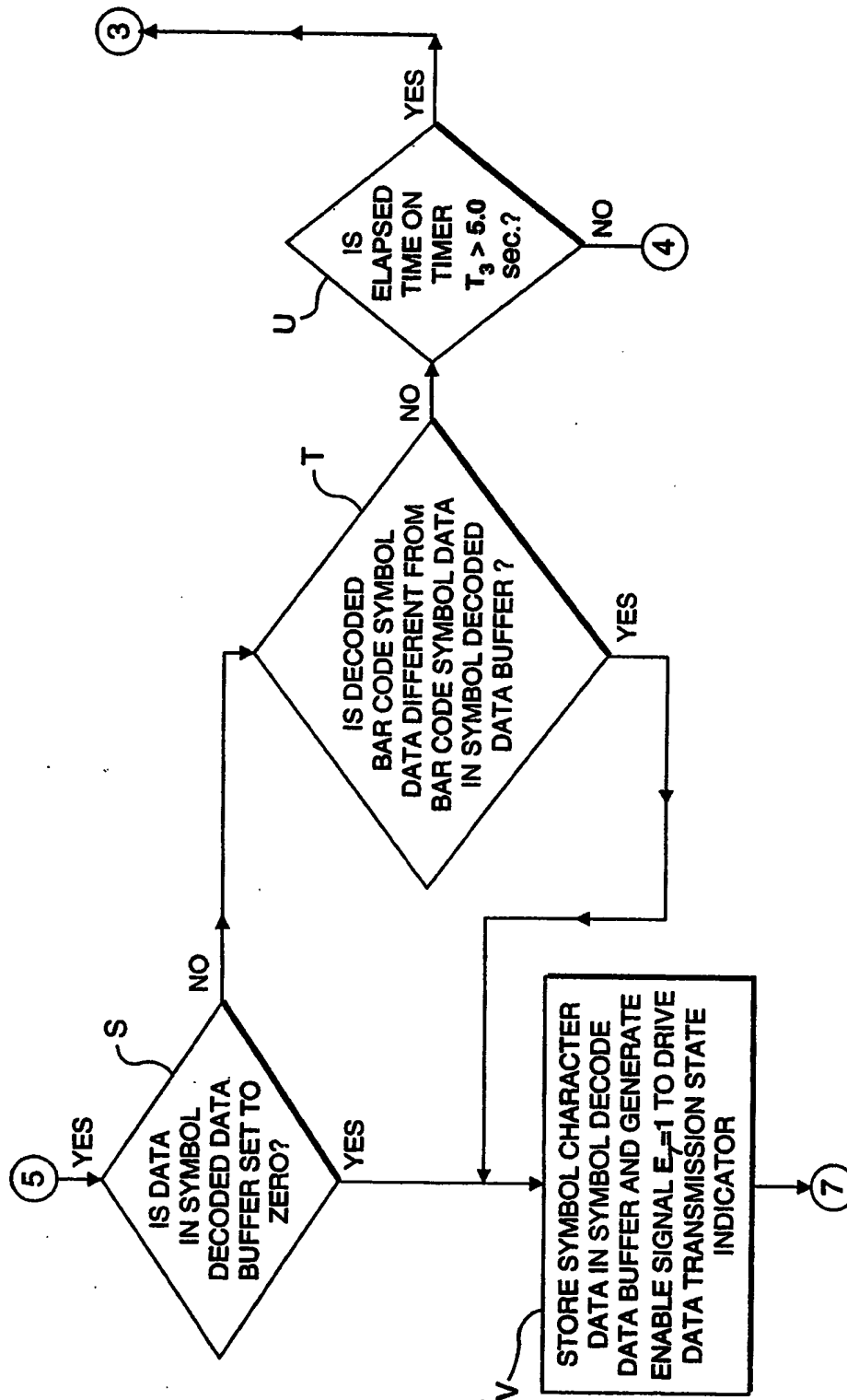


FIG. 33C

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THIRD CONTROL CIRCUIT  $C_3$  CONTINUES ACTIVATION OF LASER DIODE, SCANNING MOTOR, PHOTORECEIVING CIRCUIT, A/D CONVERSION CIRCUIT; DEACTIVATES SYMBOL DECODING MODULE; AND COMMENCES ACTIVATION DATA PACKET SYNTHESIS MODULE

W

UNDER  $C_3$  CONTROL DATA PACKET SYNTHESIS MODULE SETS PACKET NUMBER TO 1 AND INCREMENTS DATA PACKET GROUP NUMBER MODULE COUNTER

X

UNDER  $C_3$  CONTROL DATA PACKET SYNTHESIS MODULE CONSTRUCTS DATA PACKET CONSISTING OF SYMBOL CHARACTER DATA, TRANSMITTER NUMBER, DATA PACKET GROUP NUMBER, CHECK CHARACTER AND FRAMING CHARACTERS

Y

$C_3$  ACTIVATES DATA PACKET TRANSMISSION CIRCUIT

Z

UNDER  $C_3$  CONTROL DATA PACKET SYNTHESIS MODULE OUTPUTS PACKET TO DATA PACKET TRANSMISSION CIRCUIT

AA

$C_3$  DETERMINES IS PACKET NUMBER  $< 3$  ?

BB

NO

8

YES

UNDER  $C_3$  CONTROL DATA PACKET SYNTHESIS MODULE INCREMENTS DATA PACKET GROUP NUMBER

CC

$C_3$  ALLOWS  $T_5$  TO EXPIRE IN ORDER TO DELAY TRANSMISSION BASED ON LAST TWO DIGITS OF TRANSMITTER NUMBER

DD

FIG. 33D

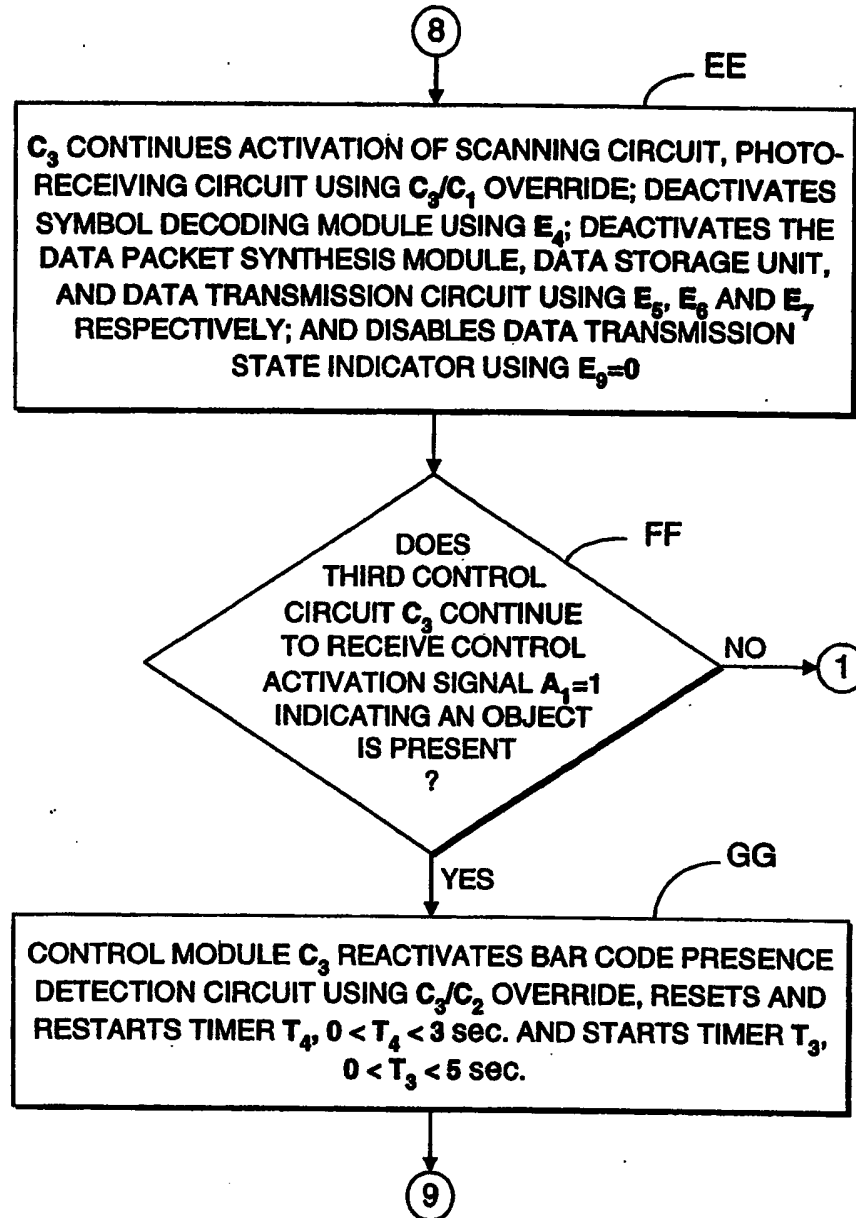
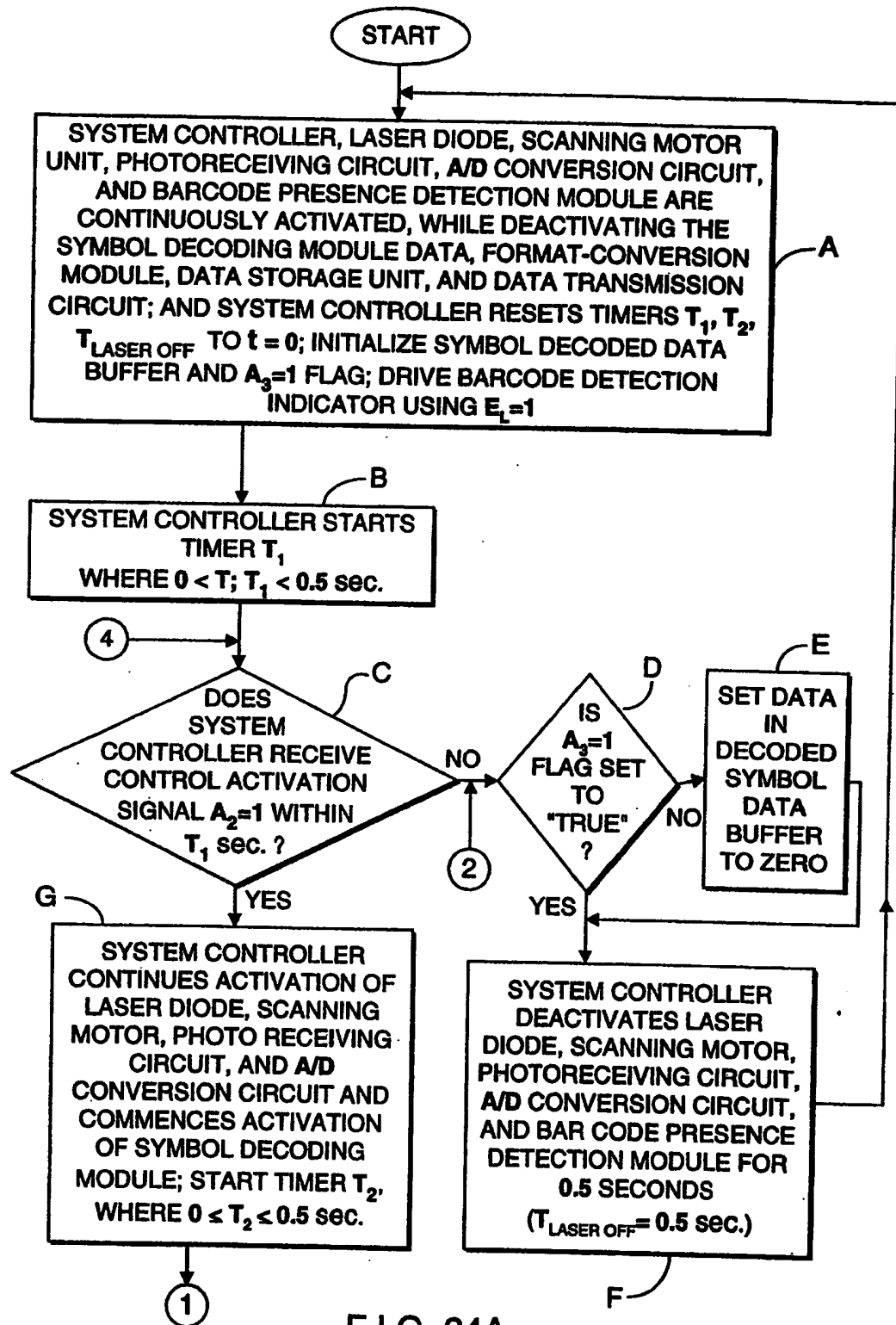


FIG. 33E





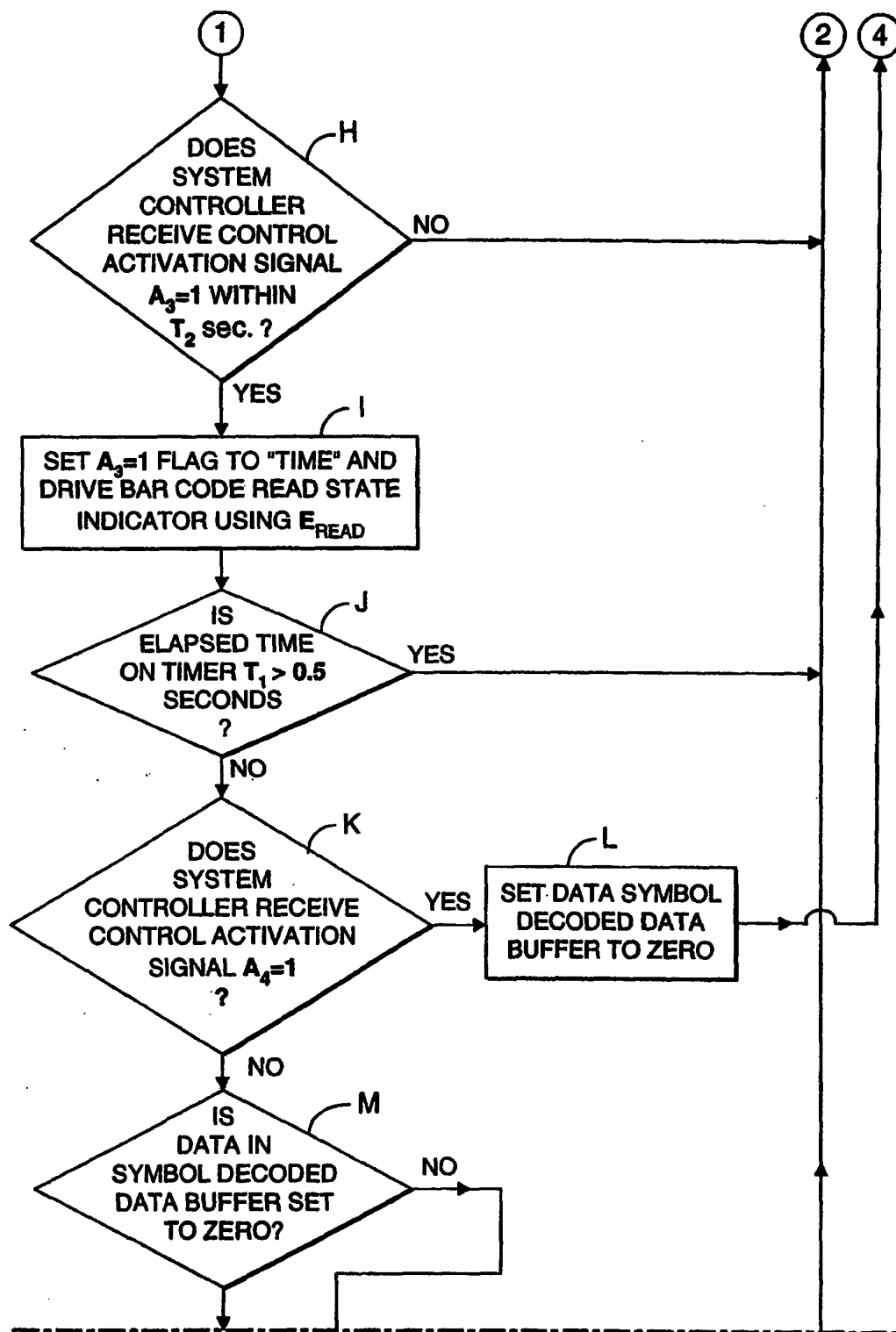


FIG. 34B1

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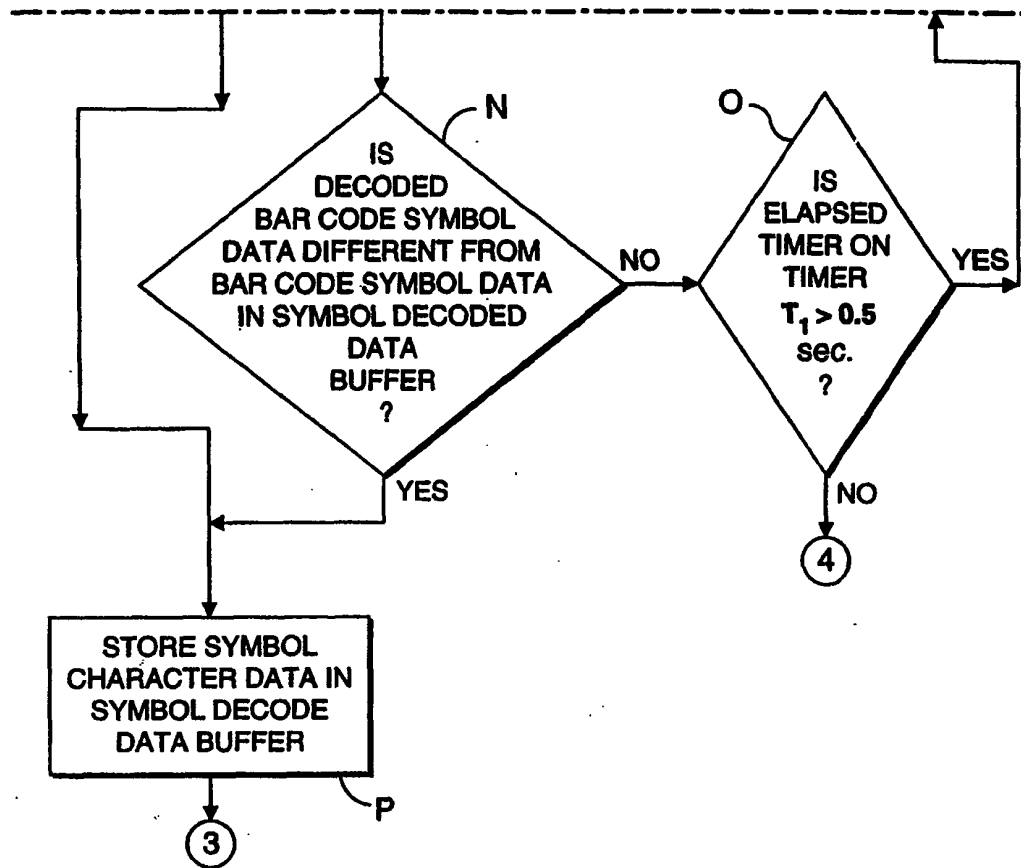


FIG. 34B2

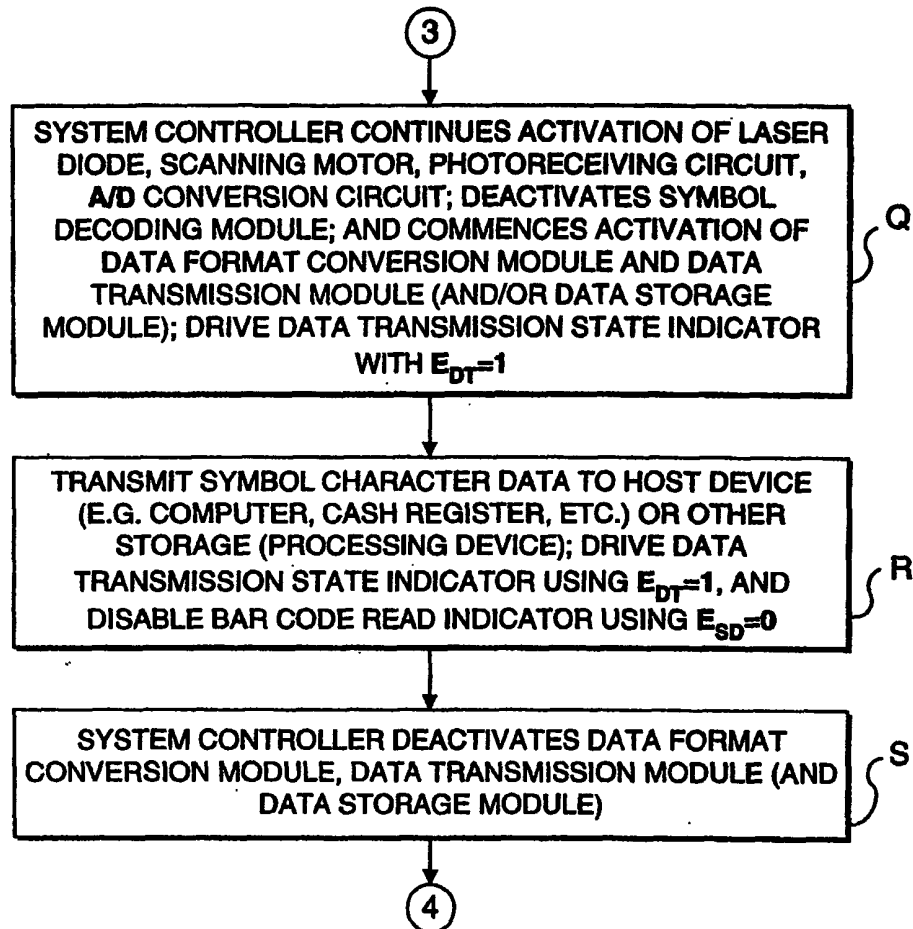


FIG. 34C

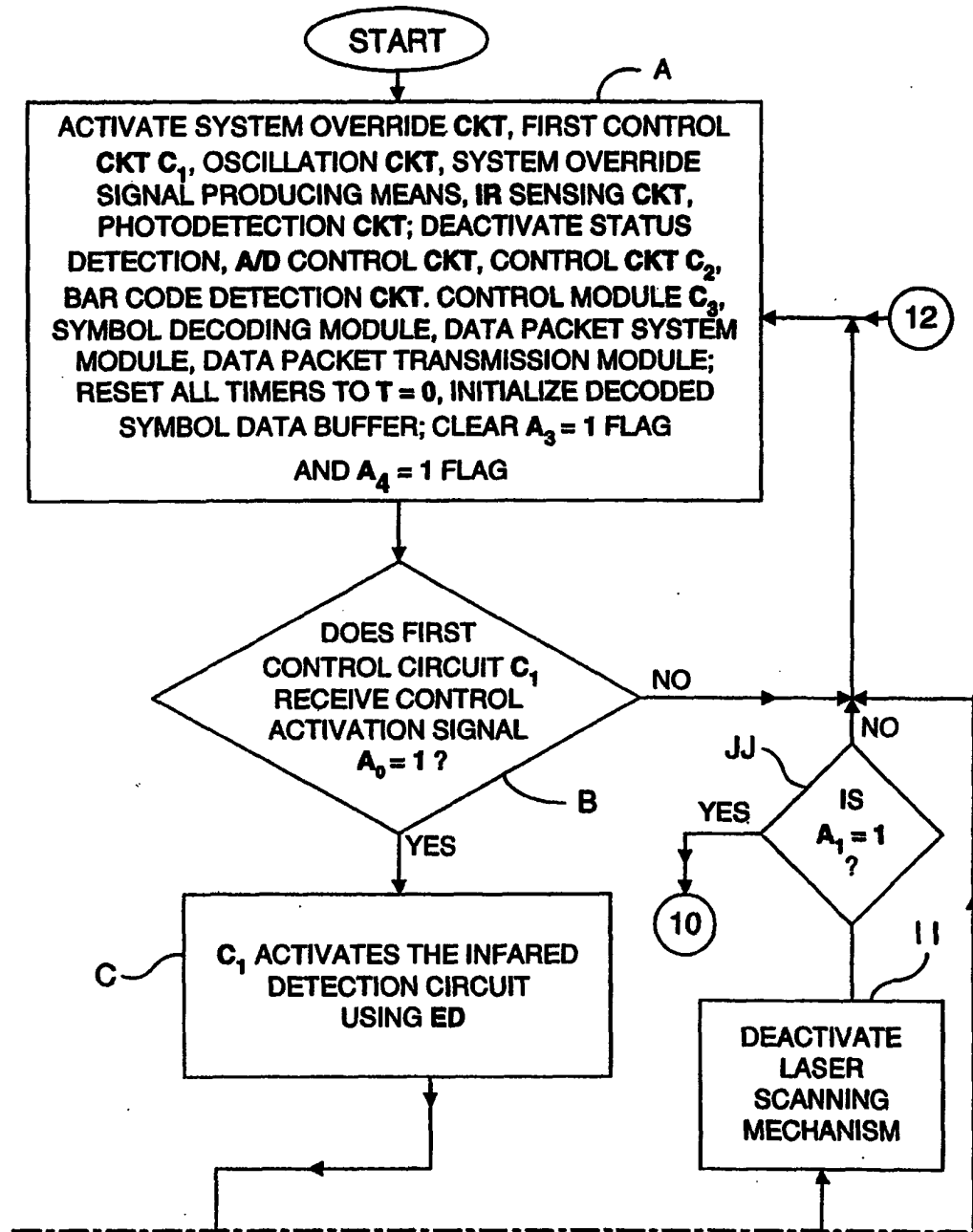


FIG. 35A1

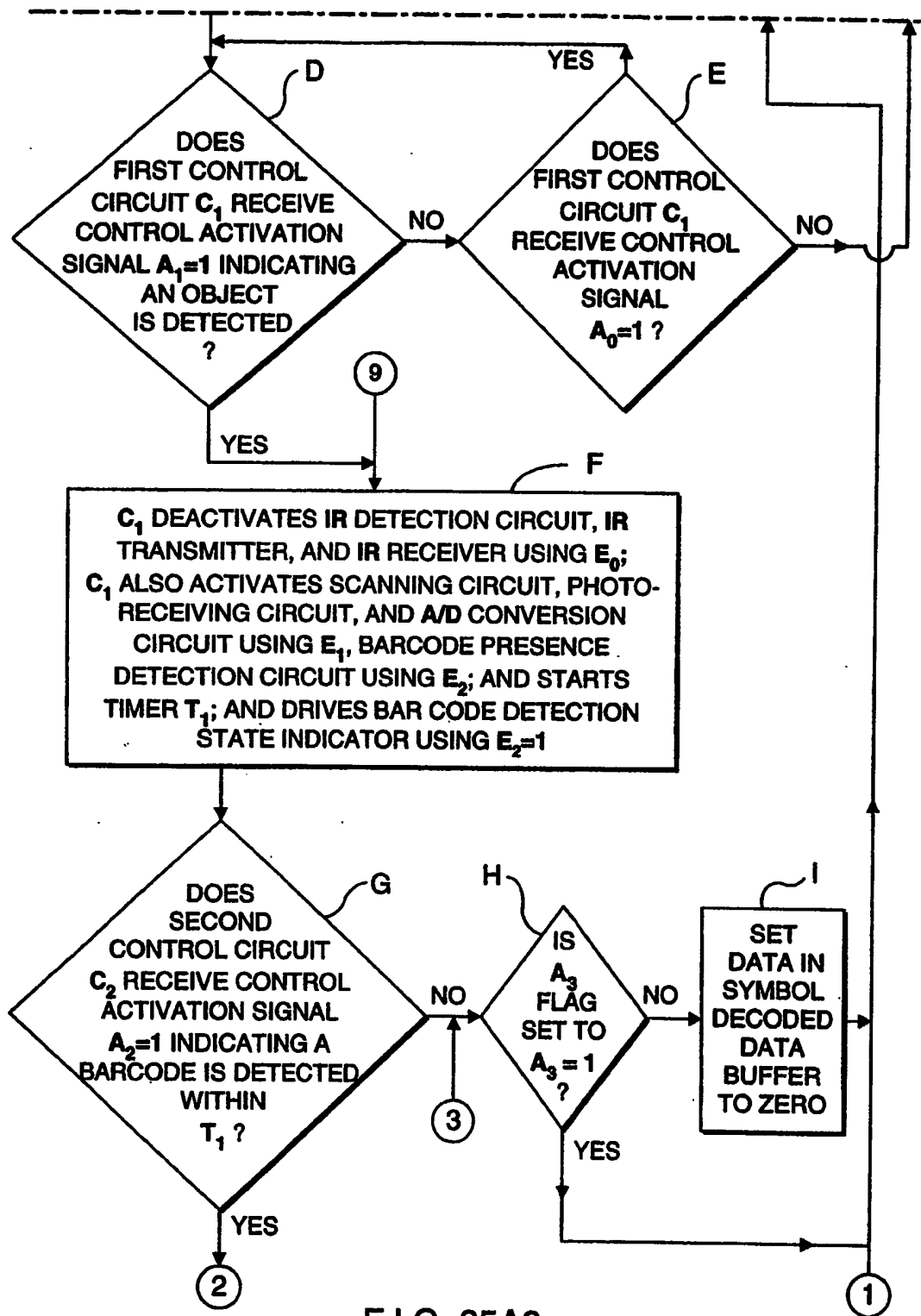


FIG. 35A2

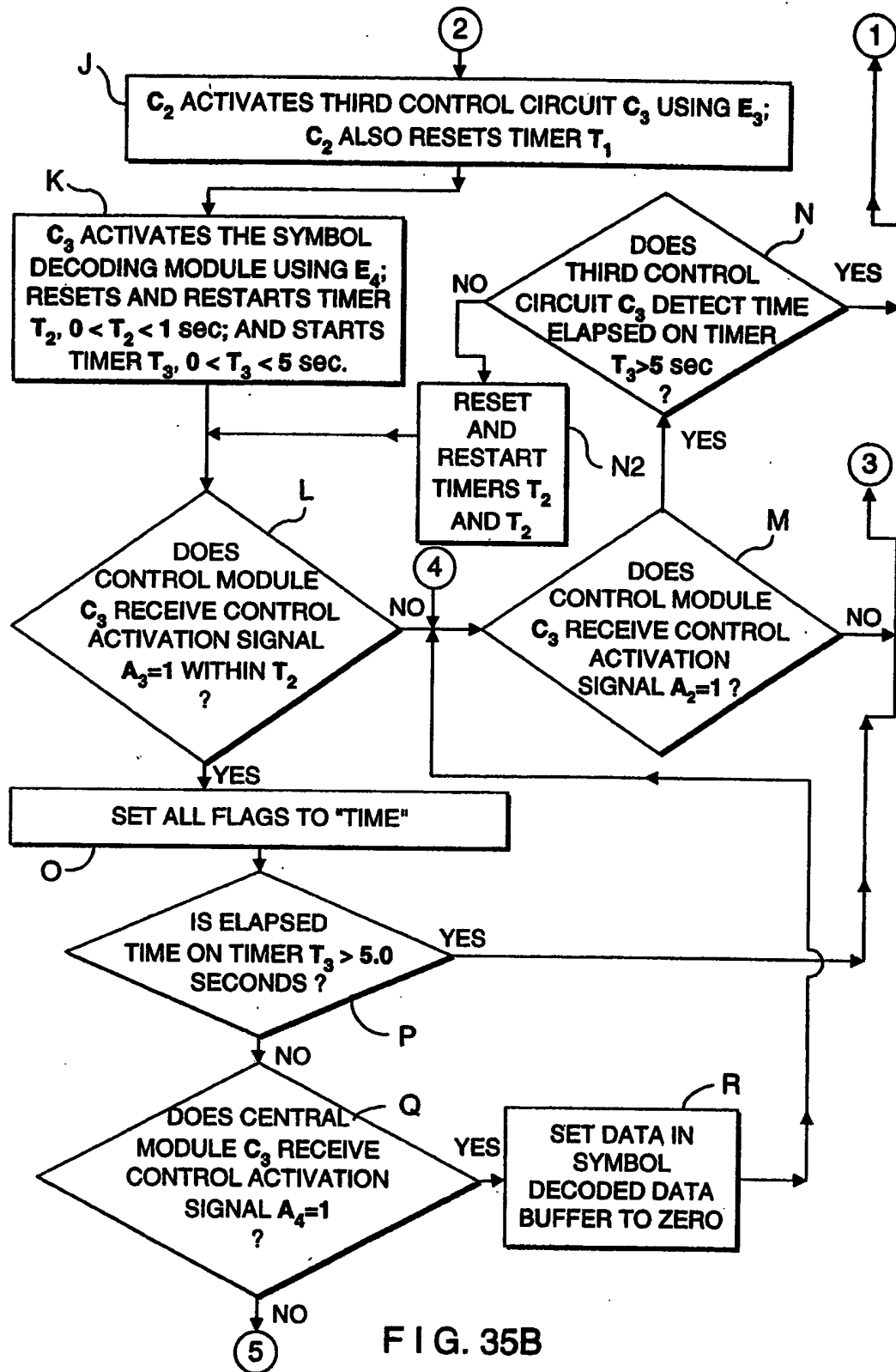


FIG. 35B

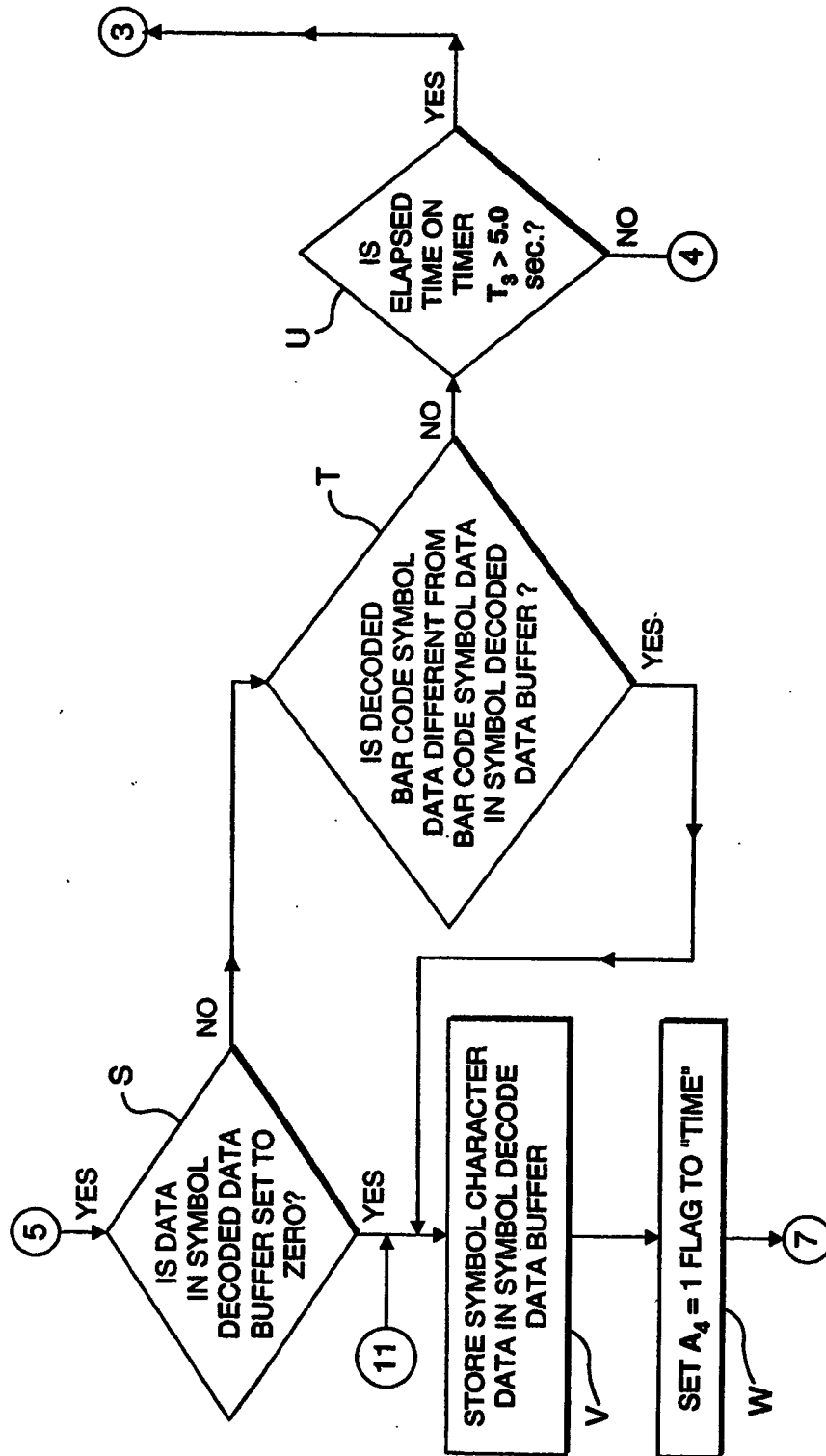


FIG. 35C



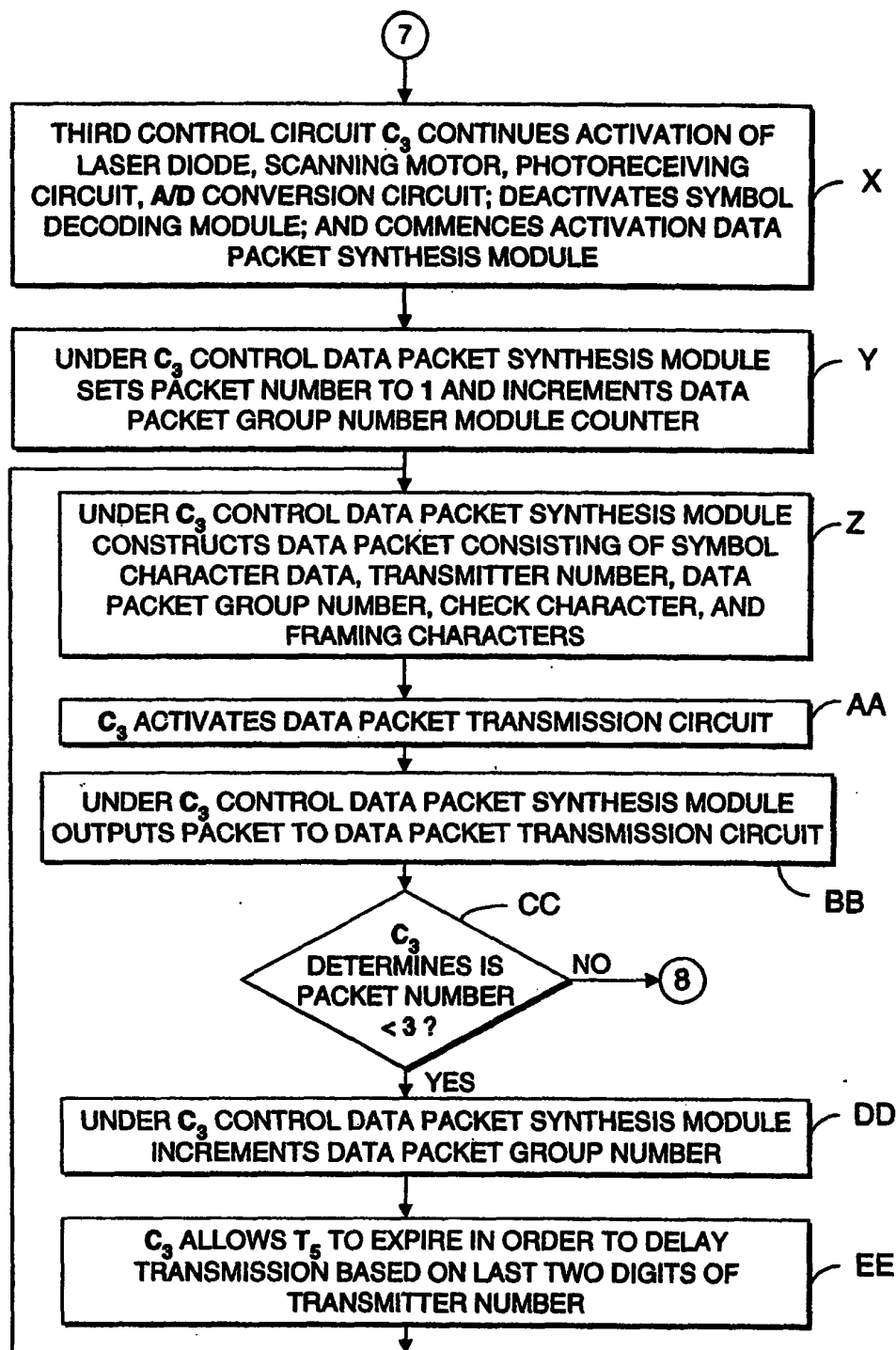


FIG. 35D

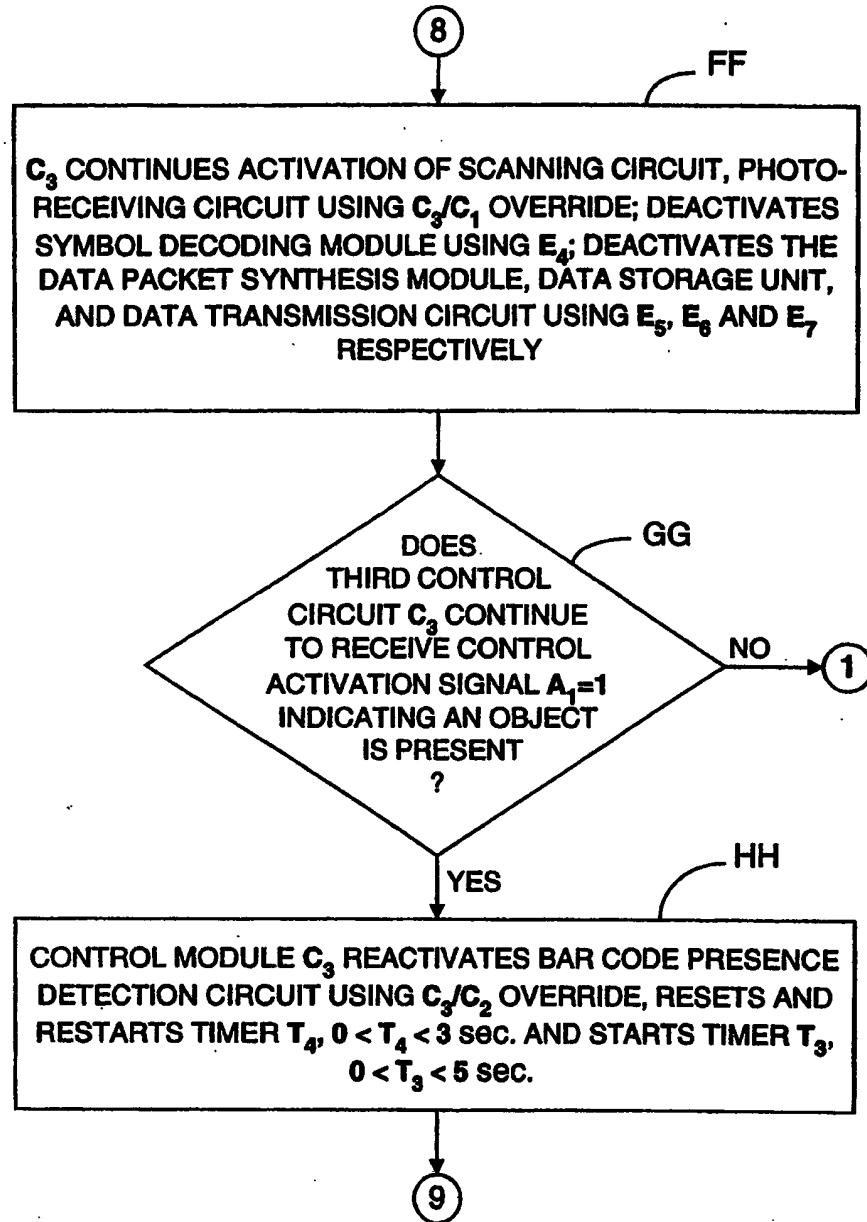


FIG. 35E

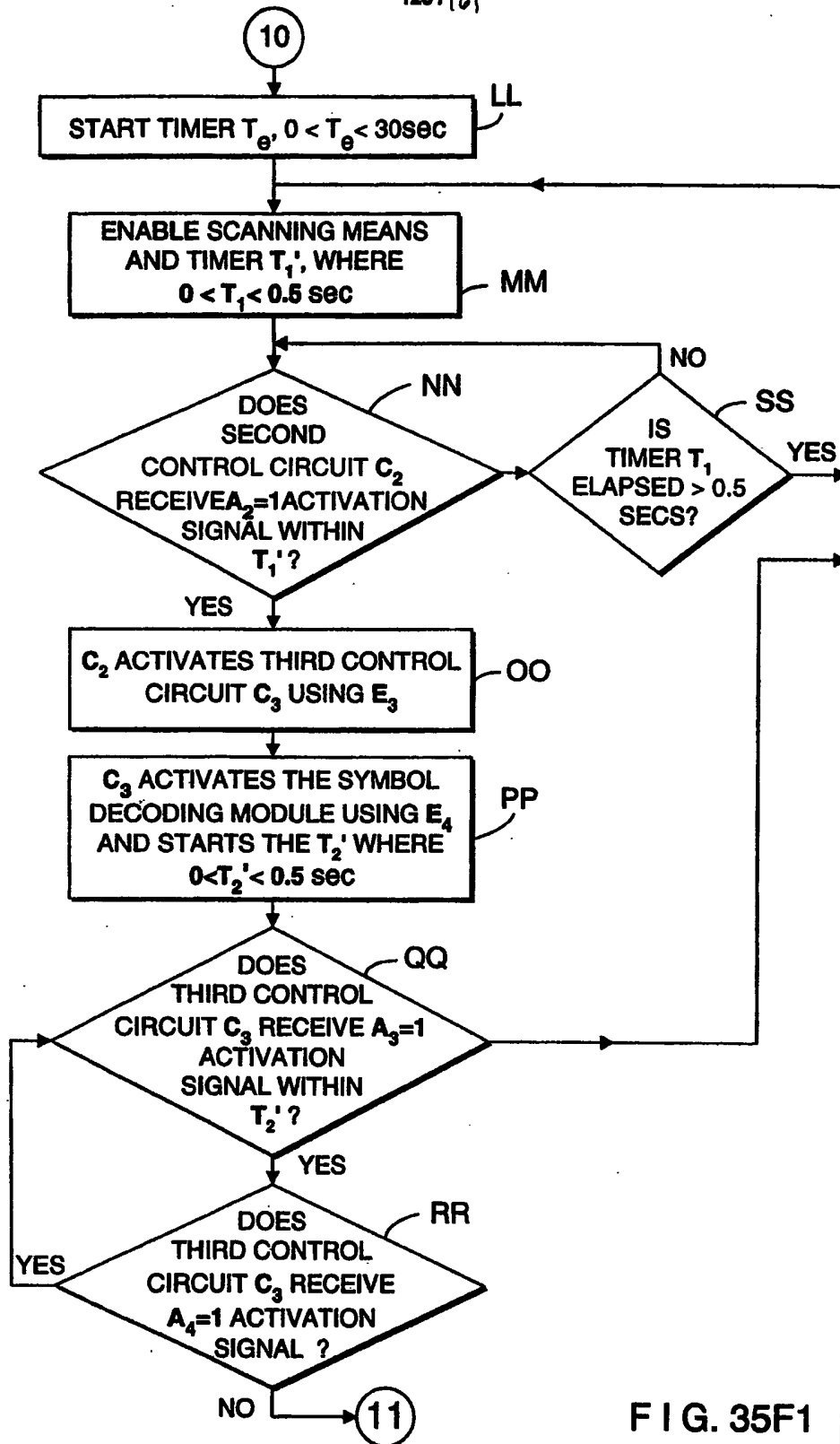


FIG. 35F1

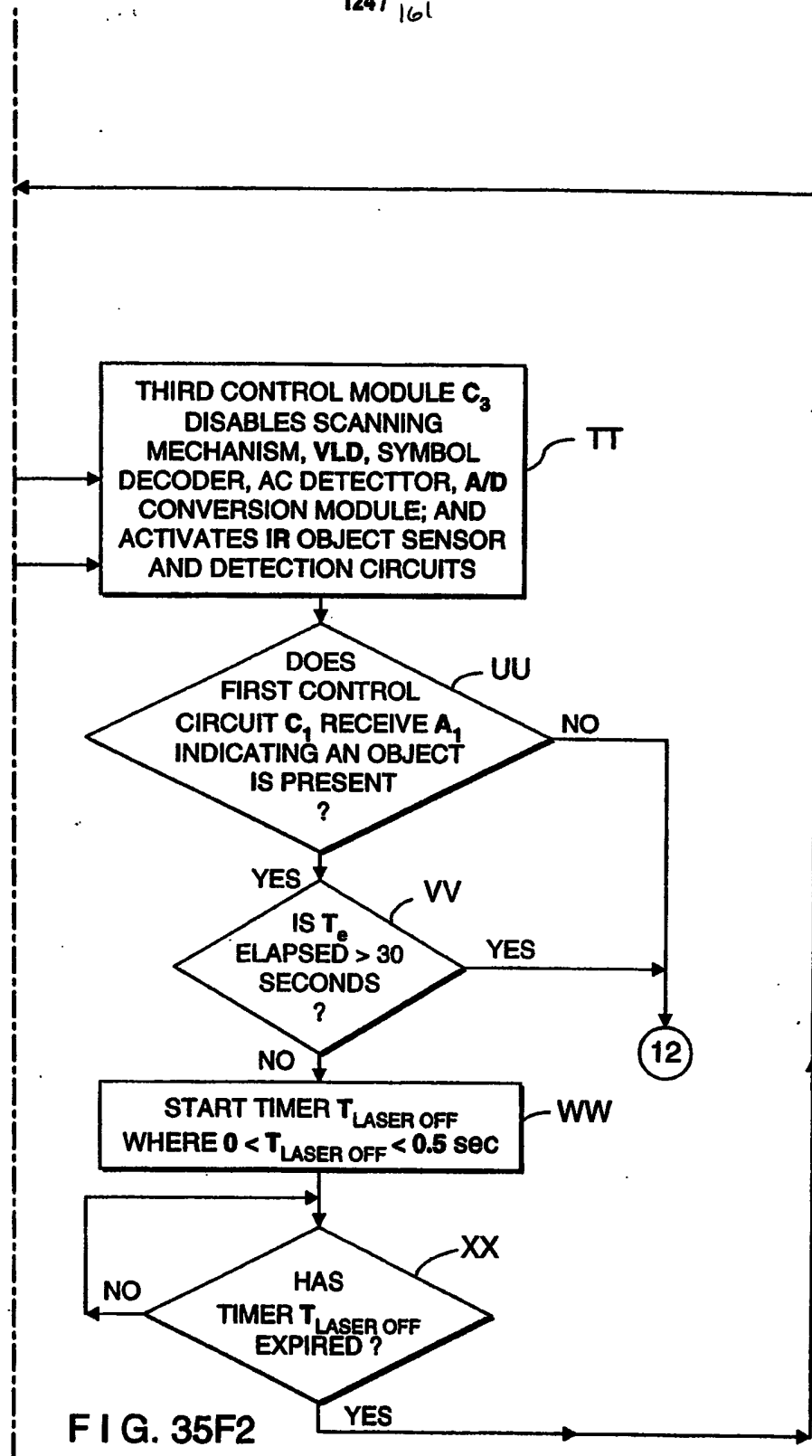
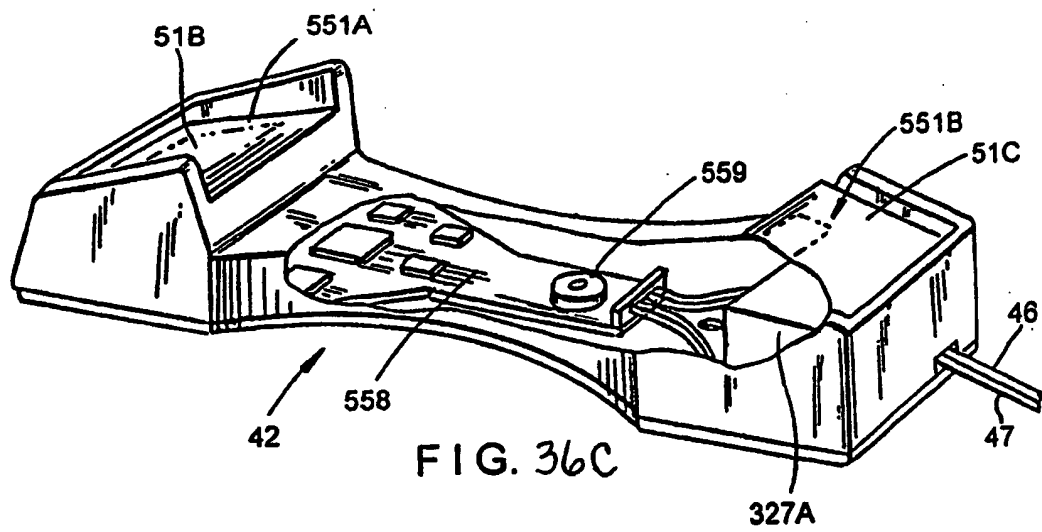
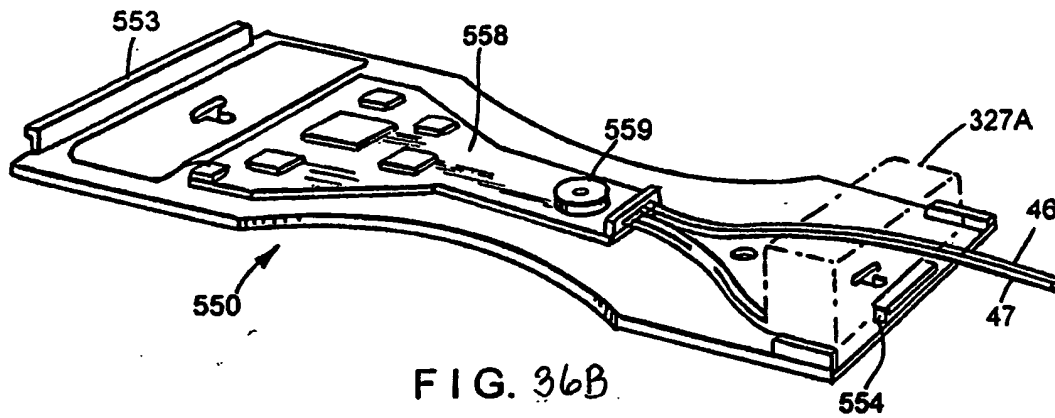
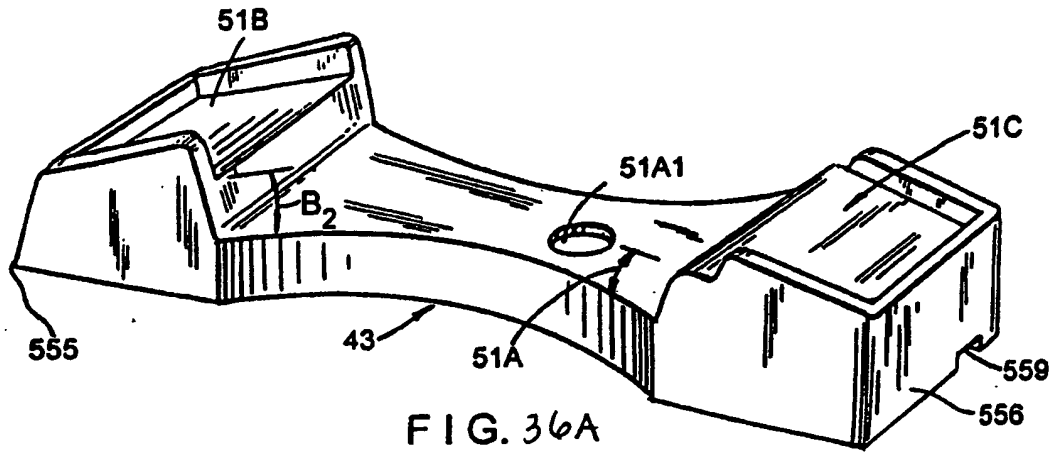
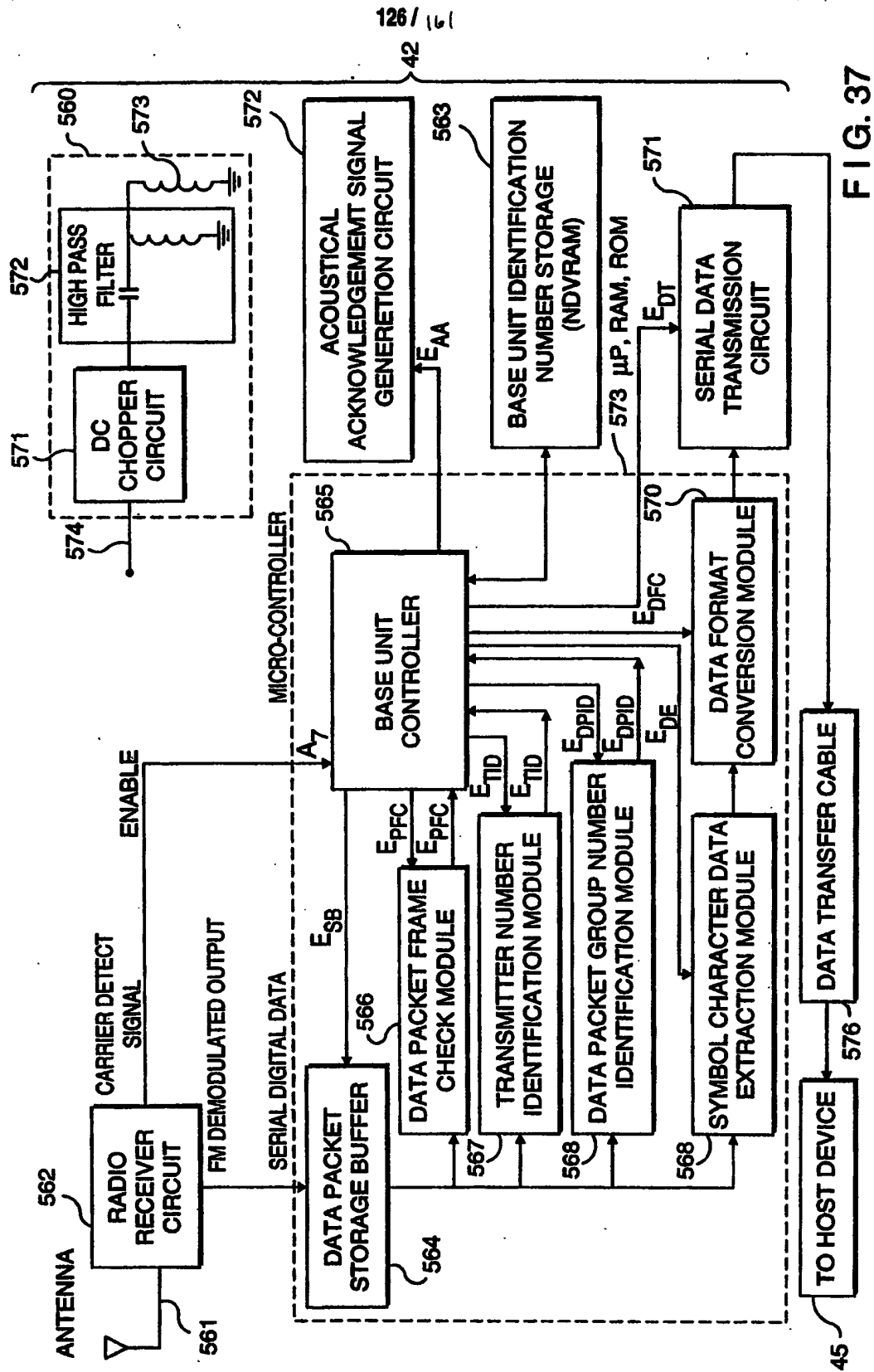


FIG. 35F2

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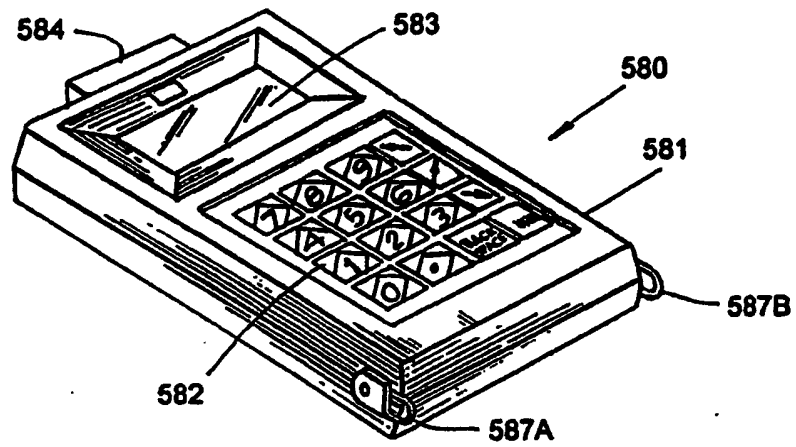


FIG. 38A

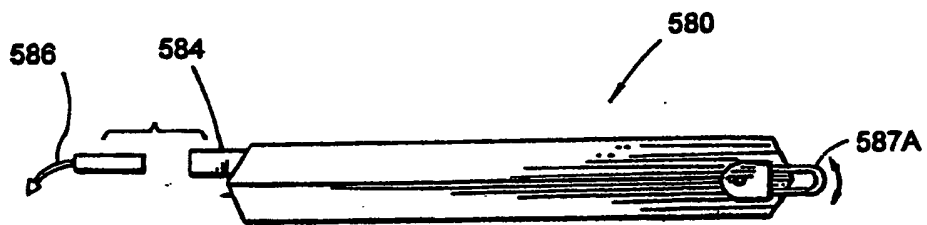


FIG. 38B

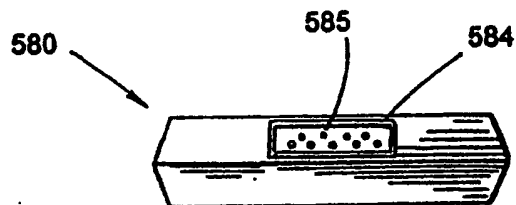


FIG. 38C

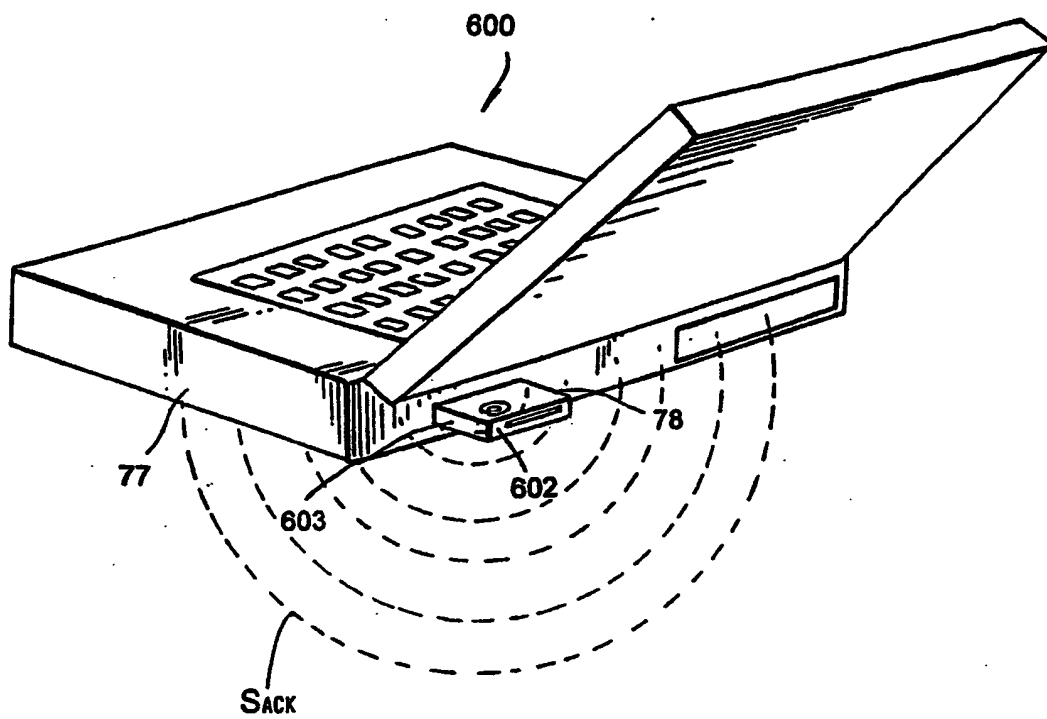
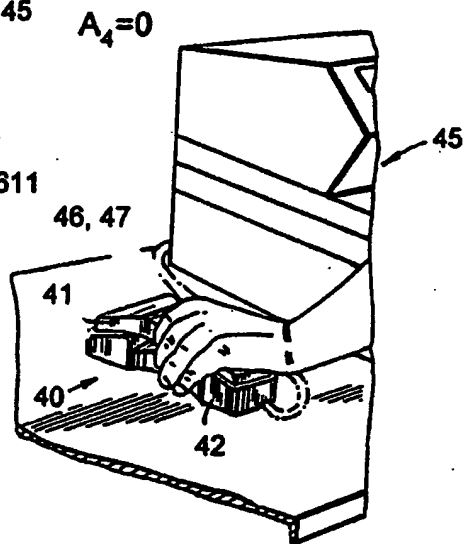
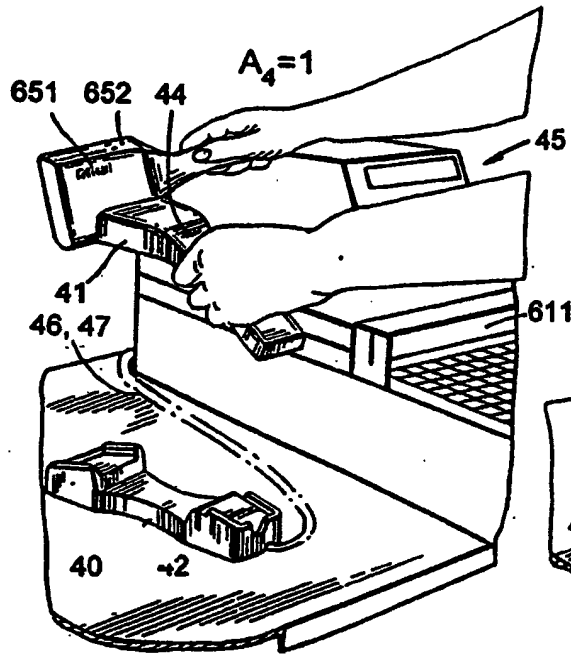
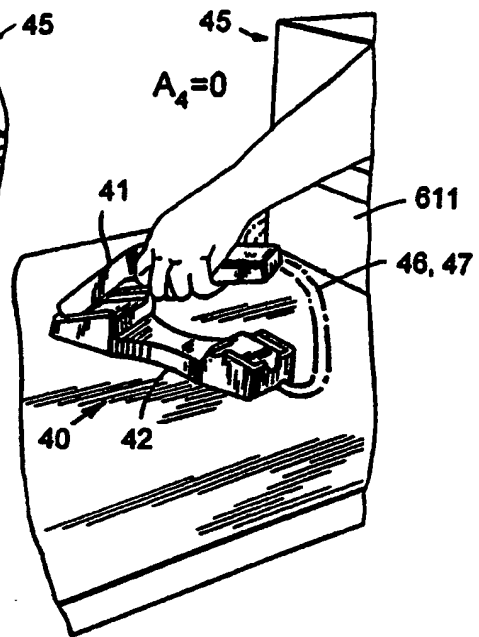
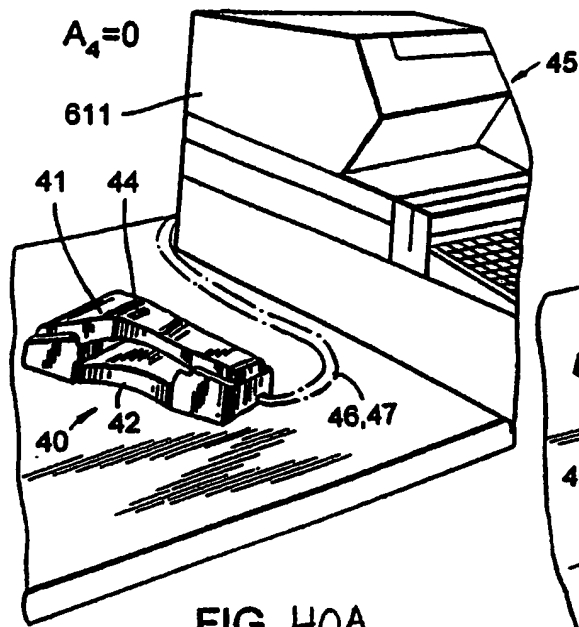


FIG. 39



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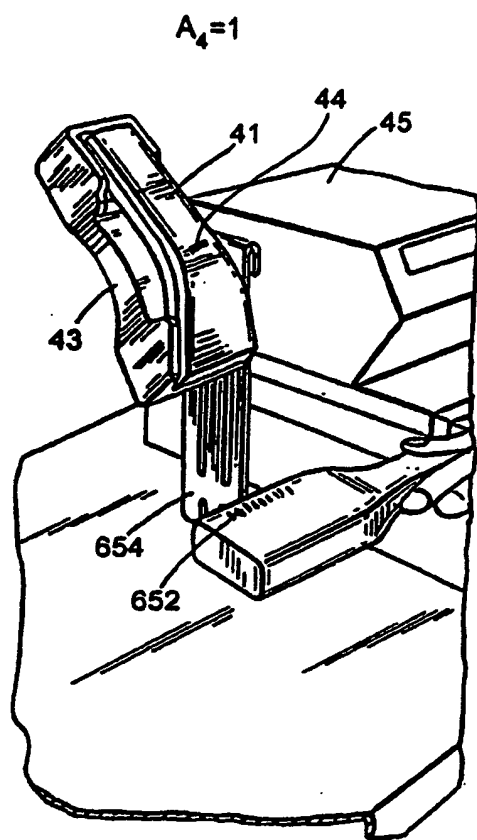


FIG. 41A

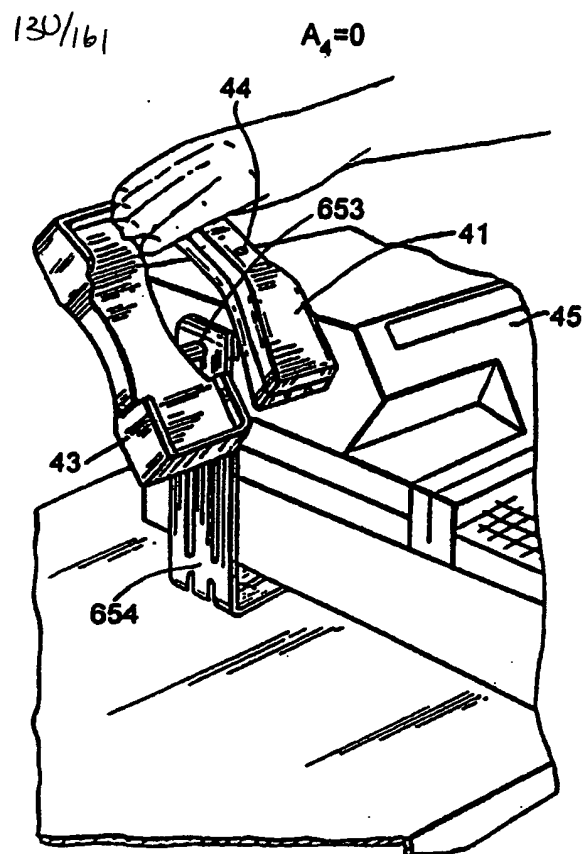


FIG. 41B

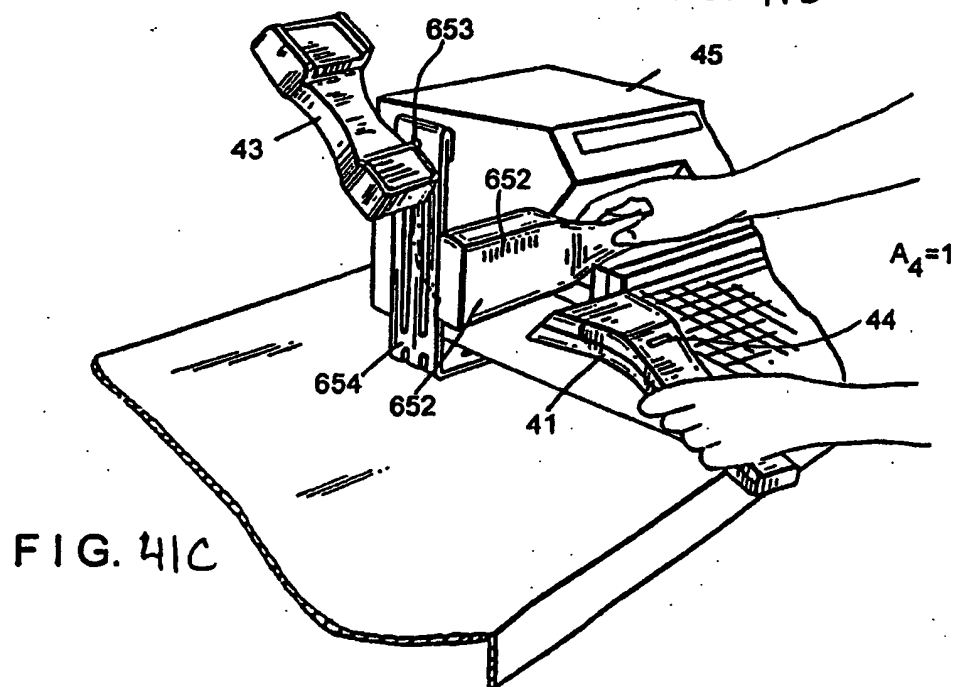


FIG. 41C

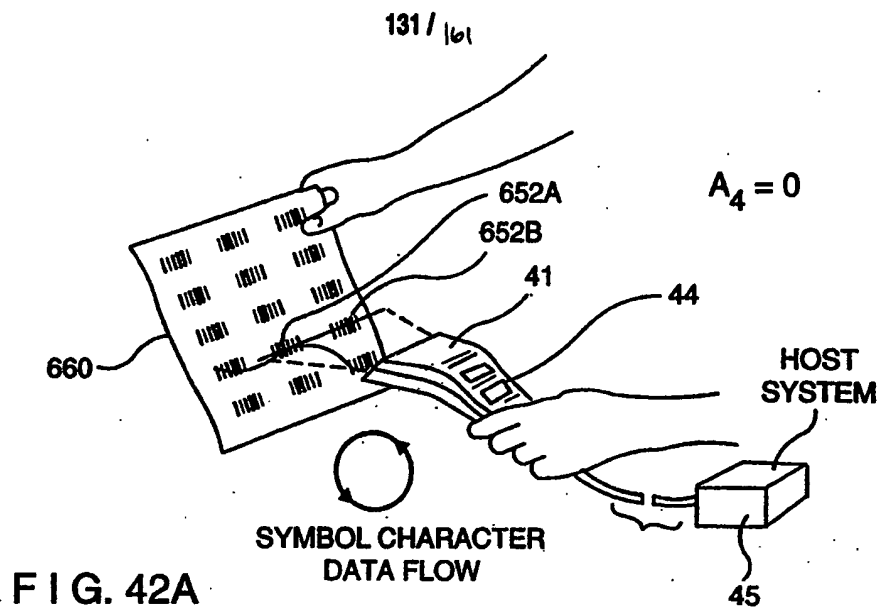


FIG. 42A

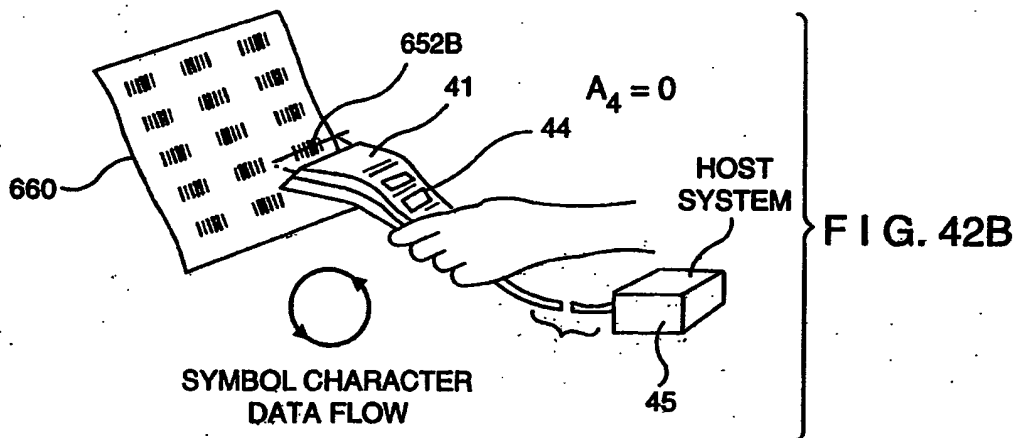


FIG. 42B

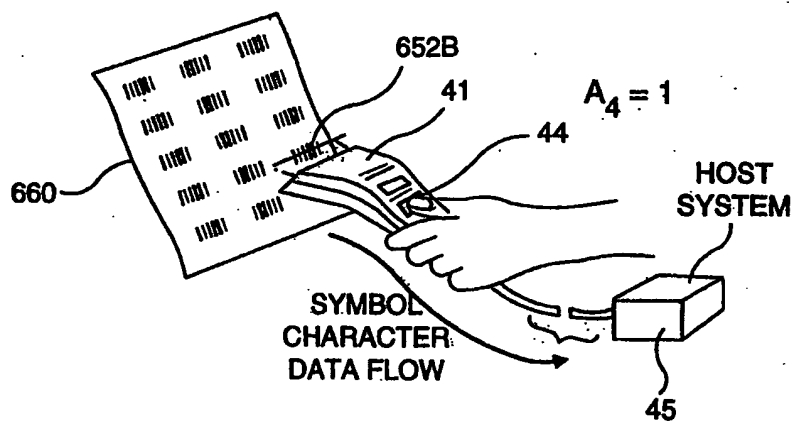
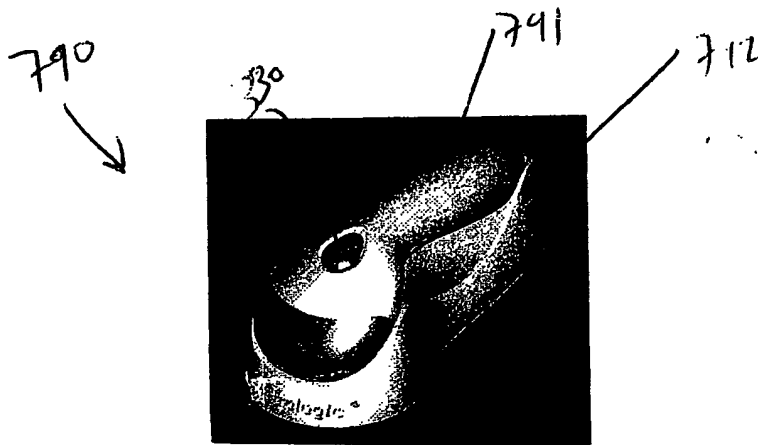
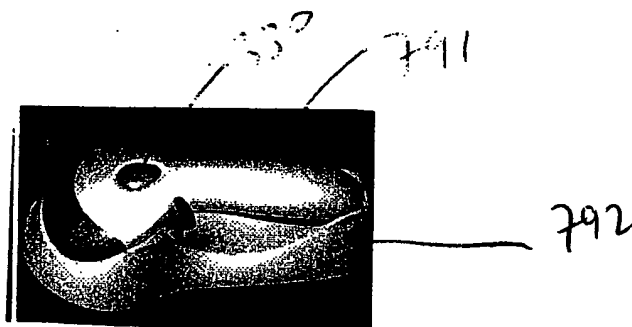
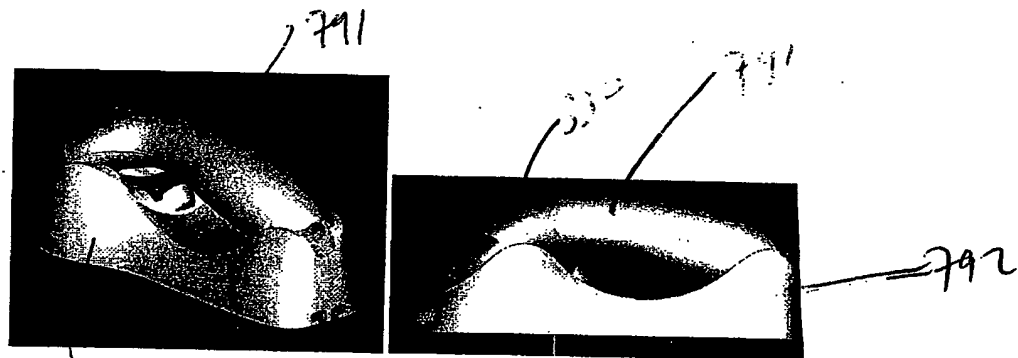


FIG. 42C

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Automatic Barcode  
Reading  
System with  
2-WAY  
RF Communication  
Link



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Protracted configuration

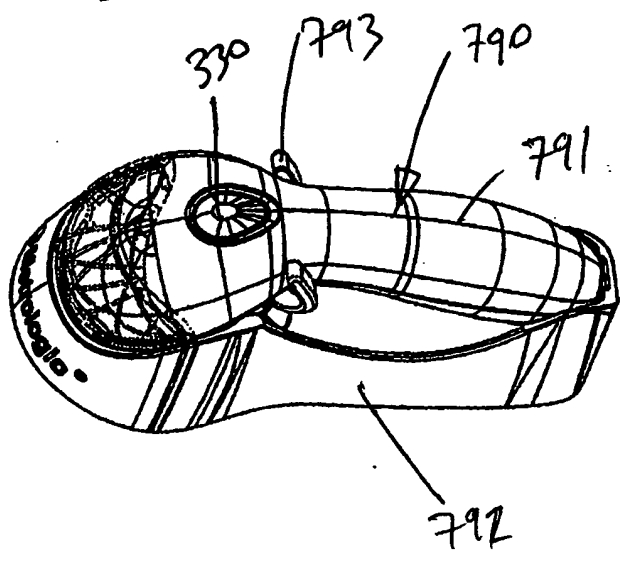


FIG. 43F

Protracted configuration

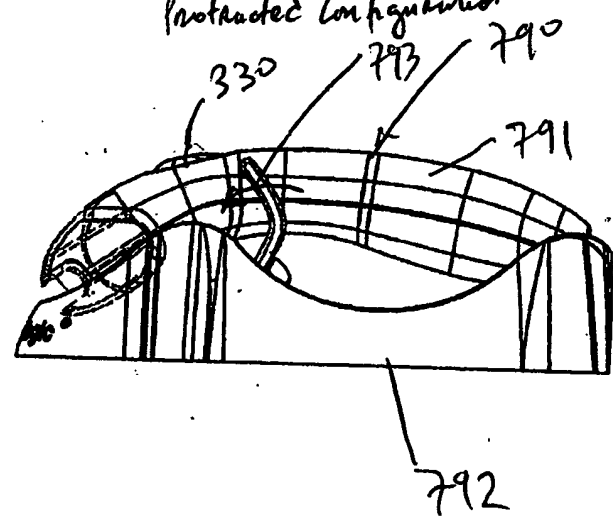


FIG. 43E

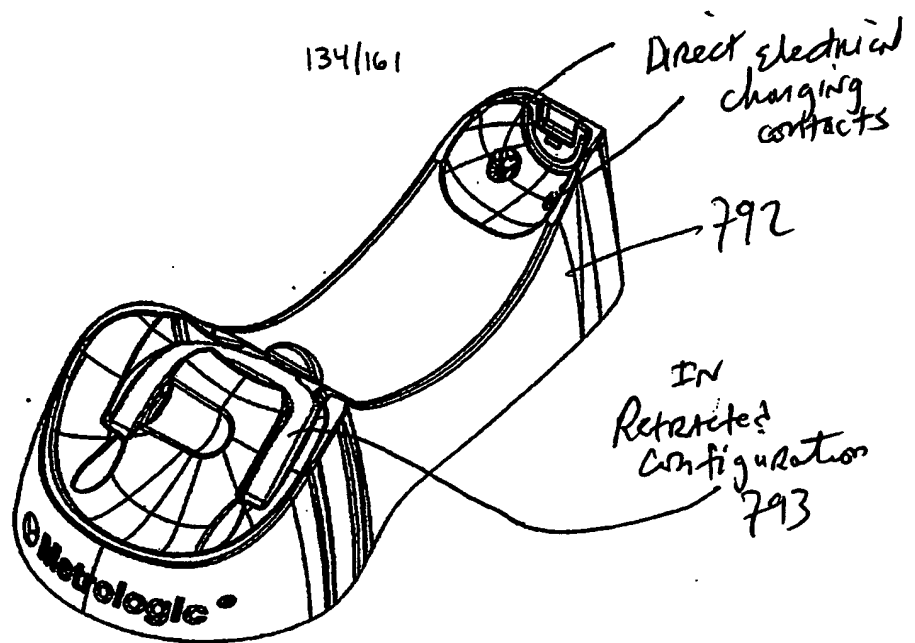


FIG. 43G

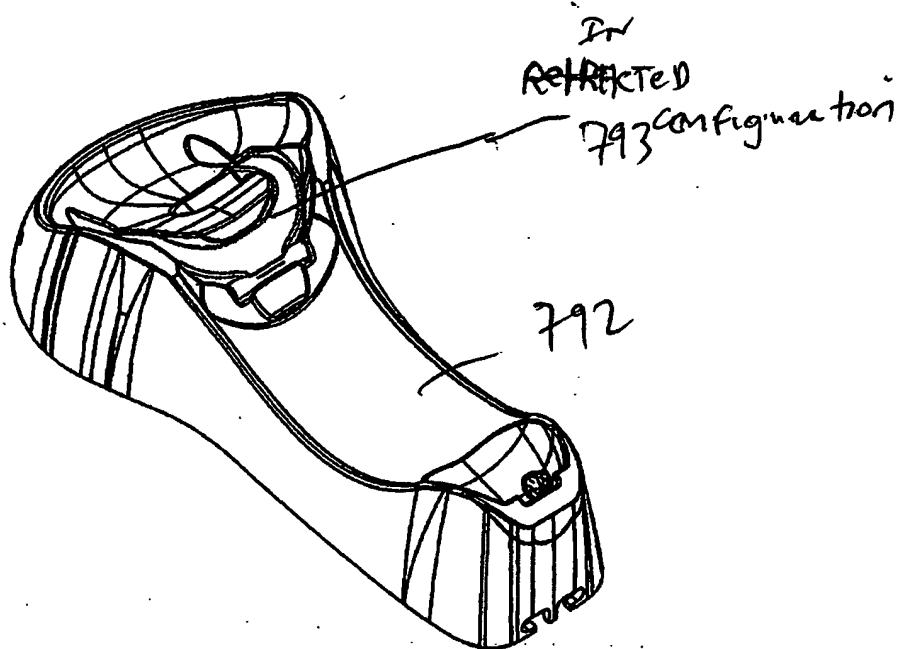


FIG. 43A

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Retracted Configuration

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FIG. 43 I 792

Projected Configuration

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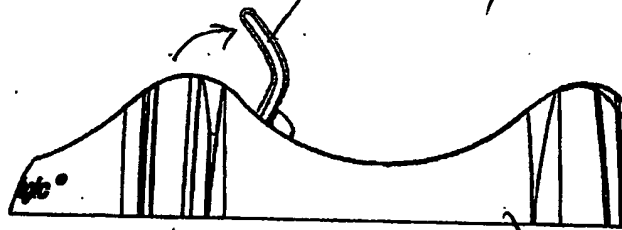


FIG. 43 J 792

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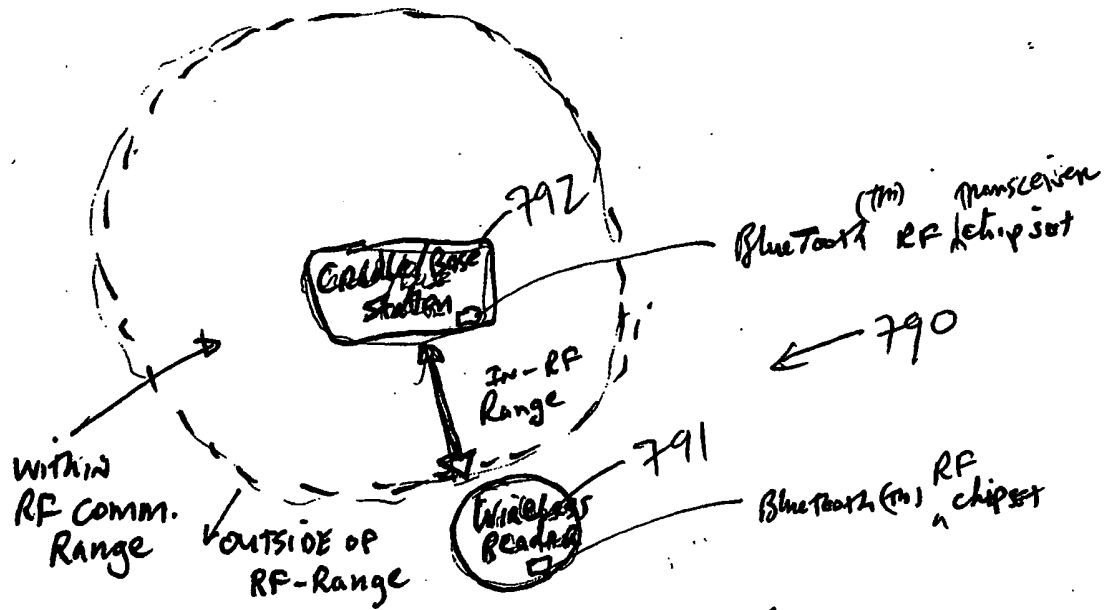


FIG. 44A1

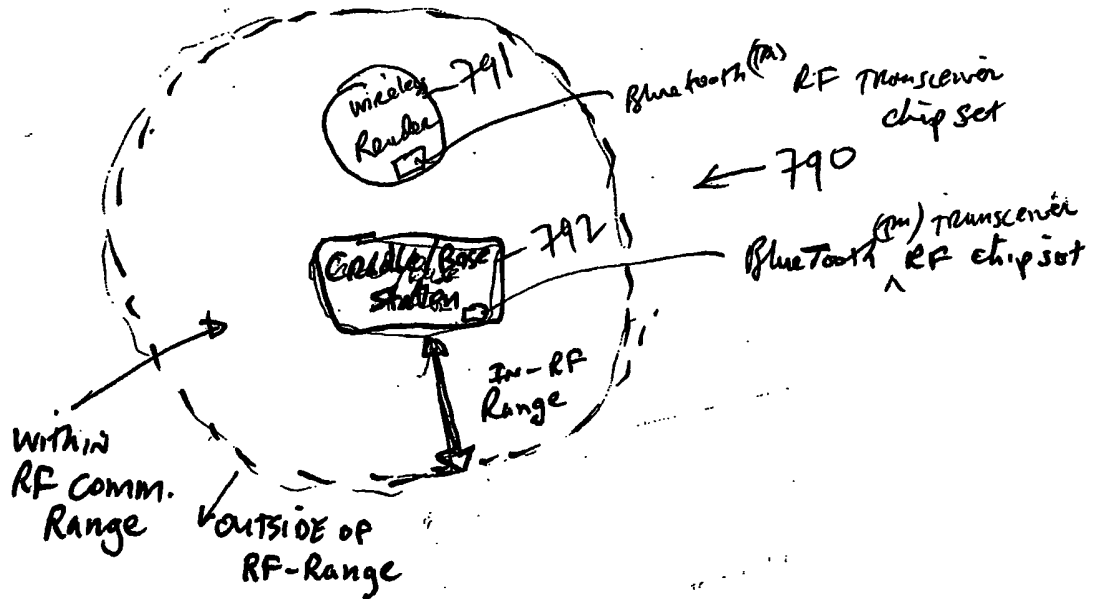
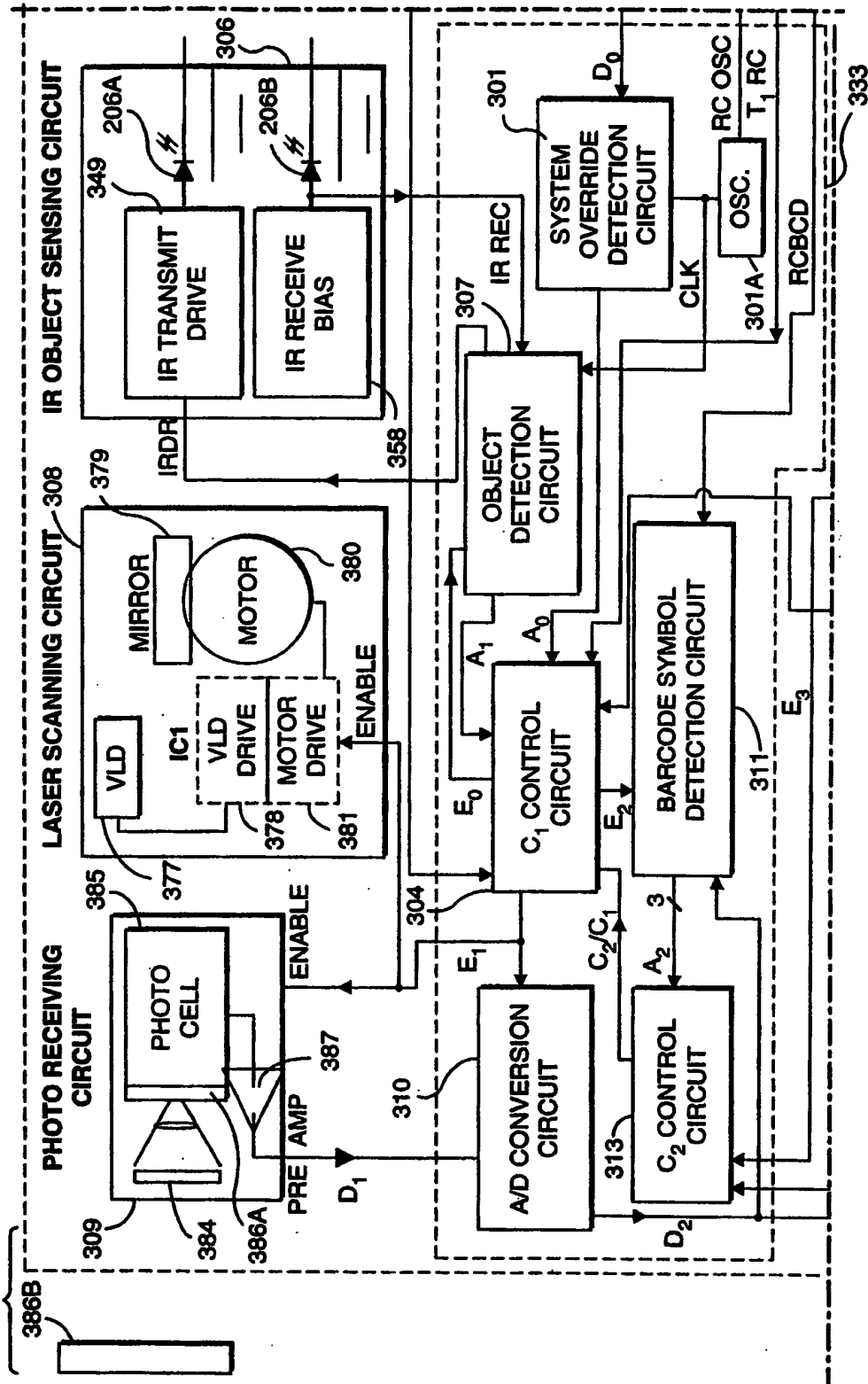


FIG. 44A2



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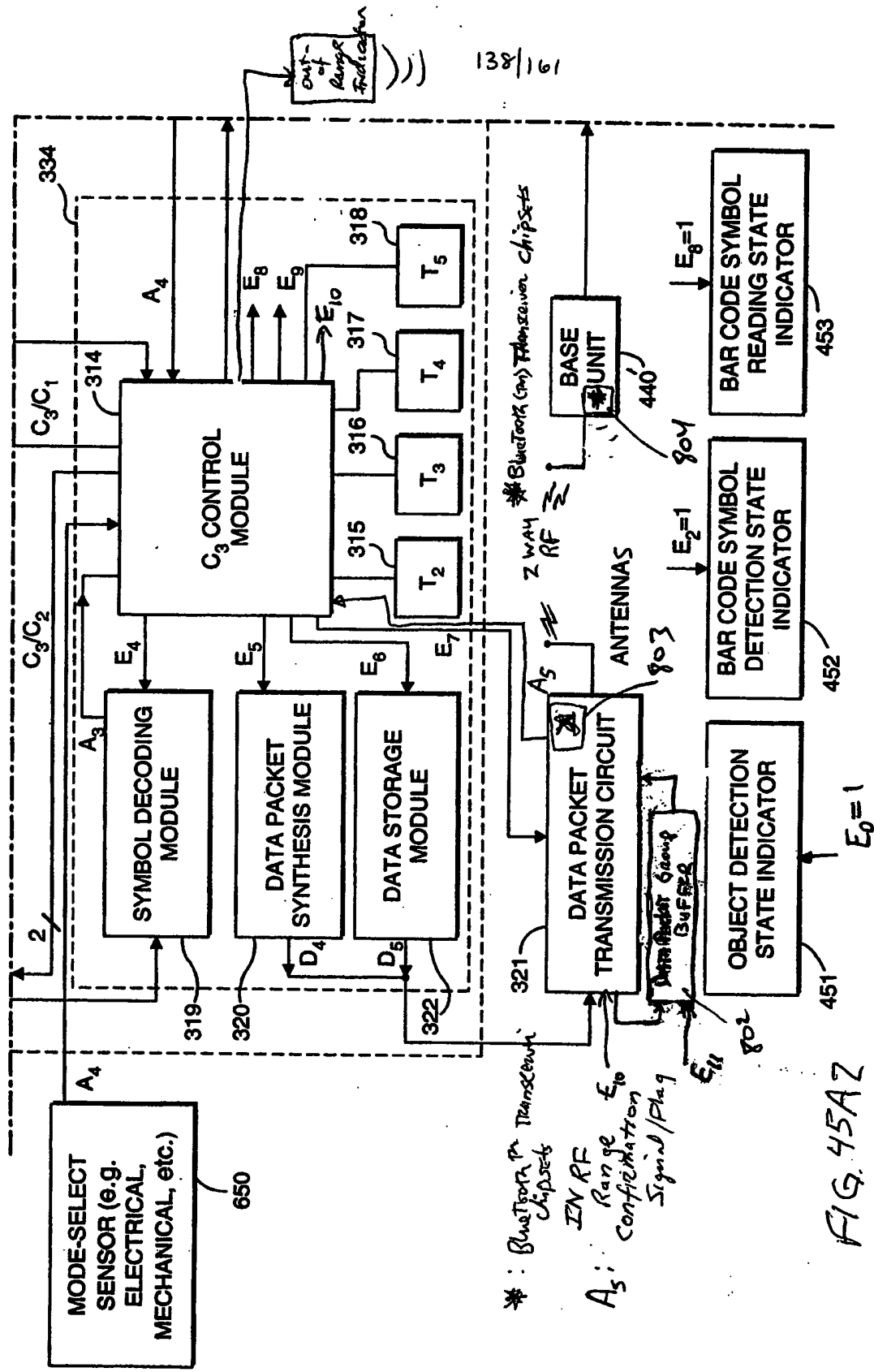
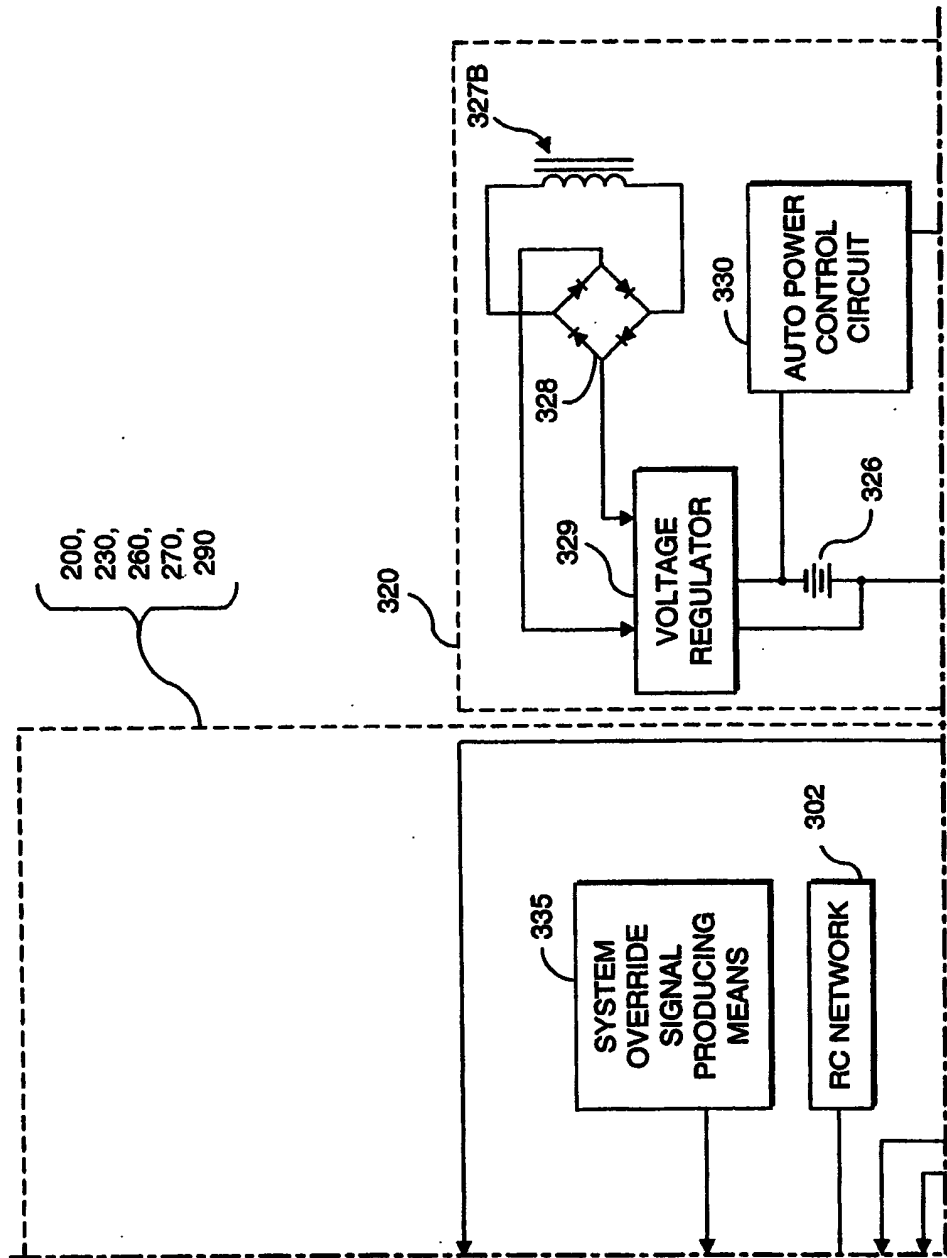


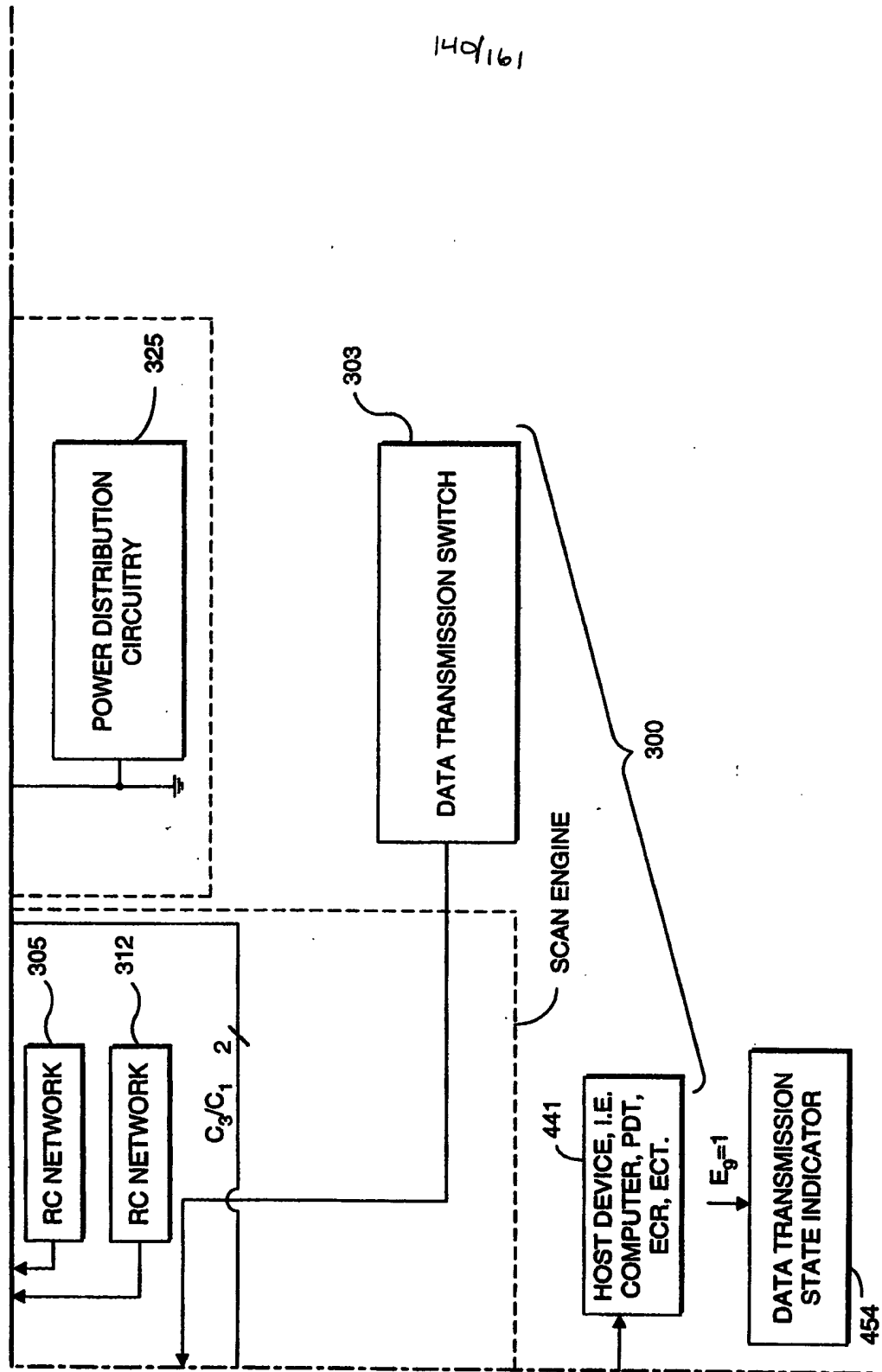
FIG. 45A



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FIG. 45A3

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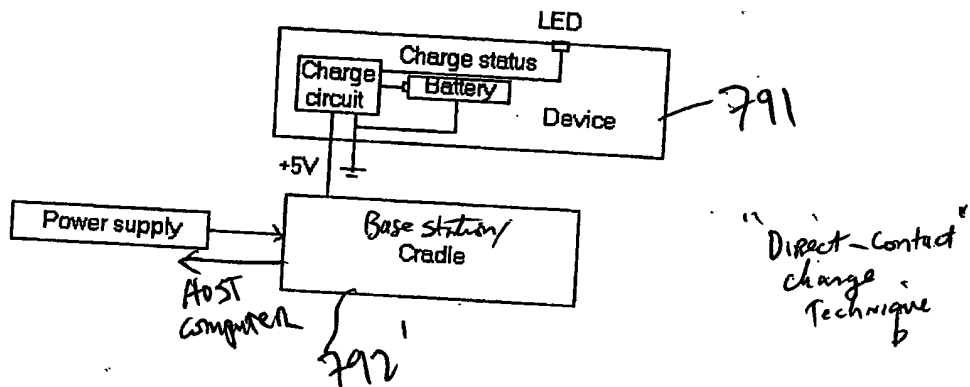


FIG. 45B

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DATA Packet  
Transmission VIA  
2-WAY RF with Automatic  
RP-Range Dependent  
Control

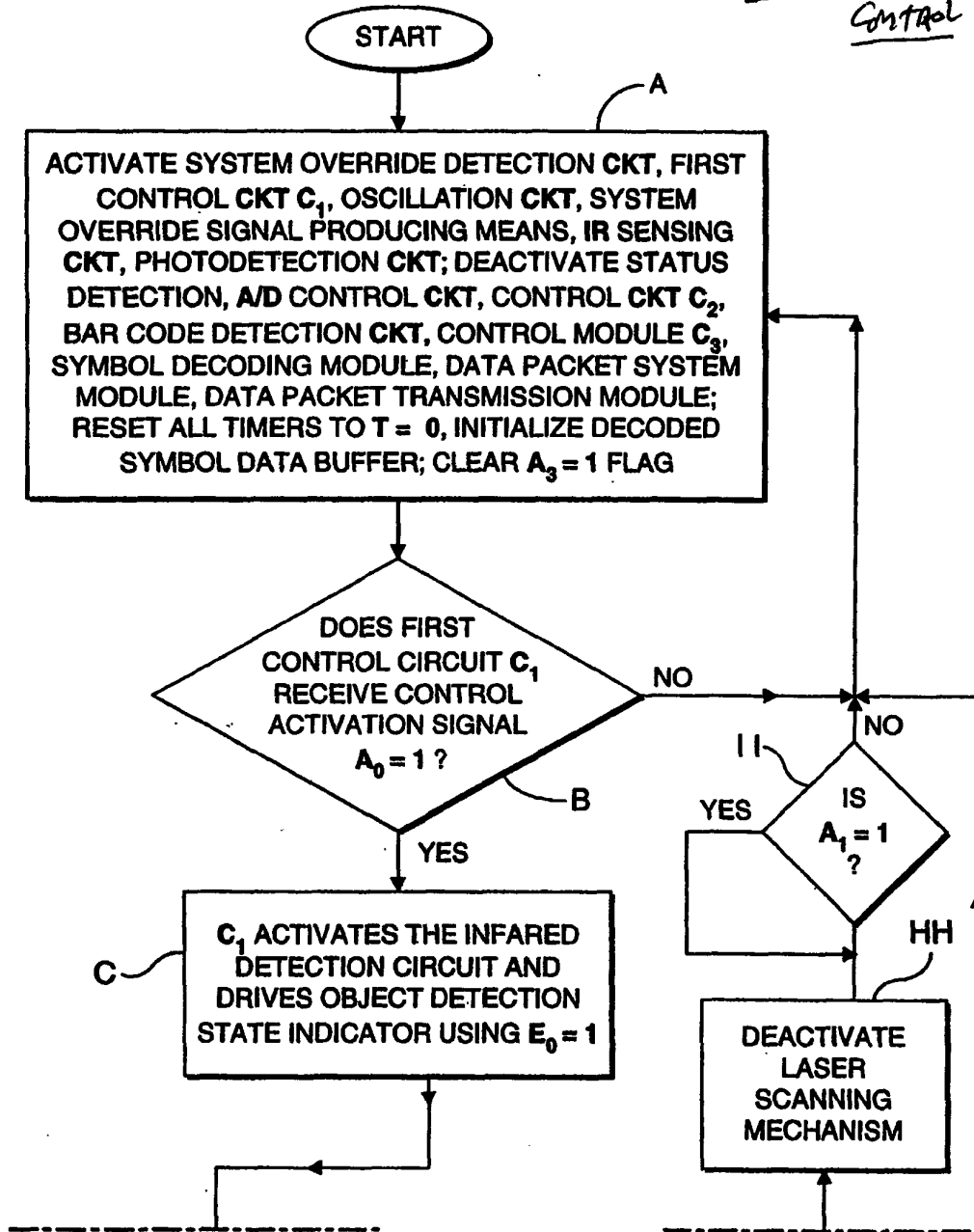


FIG. 46A1

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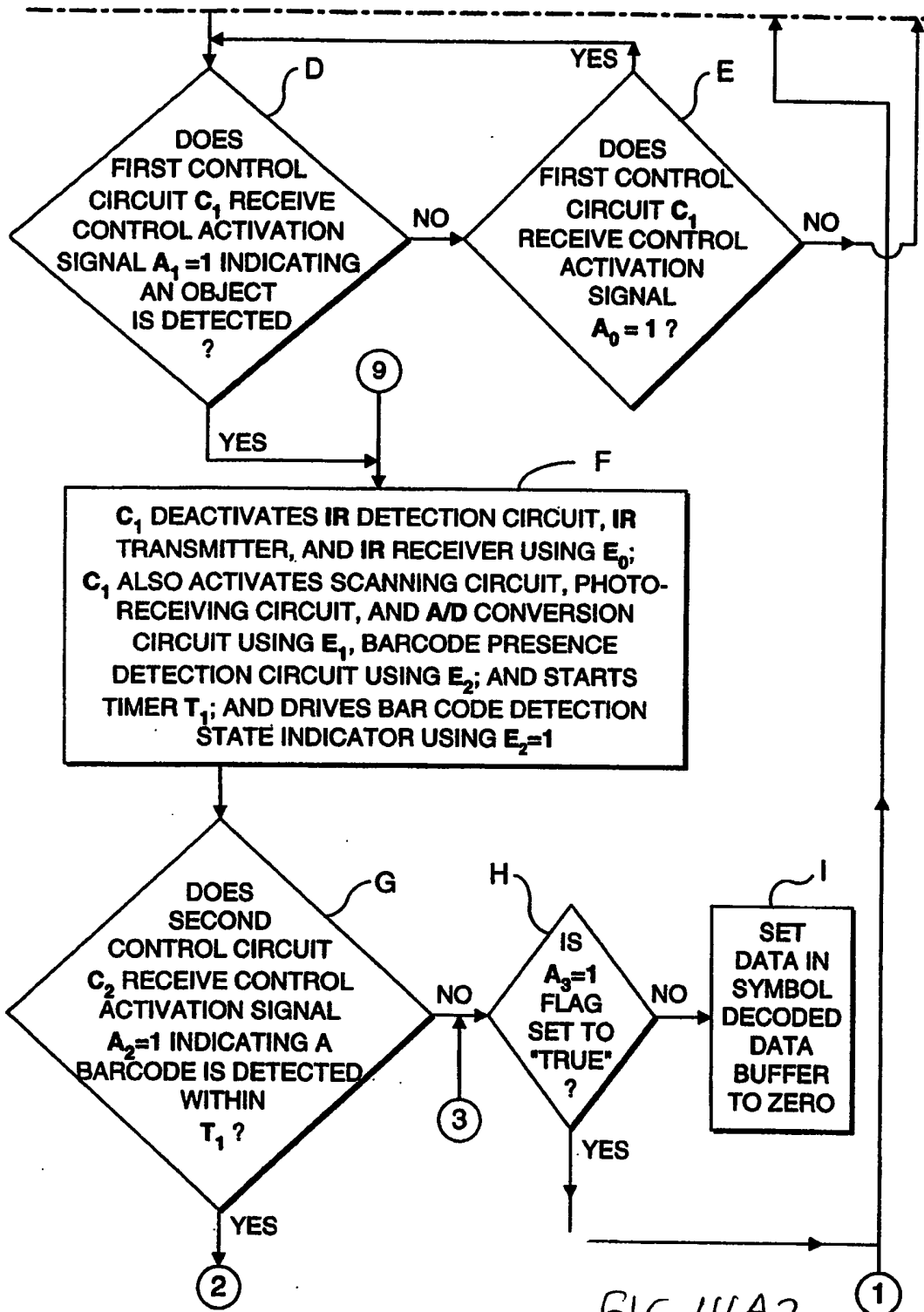
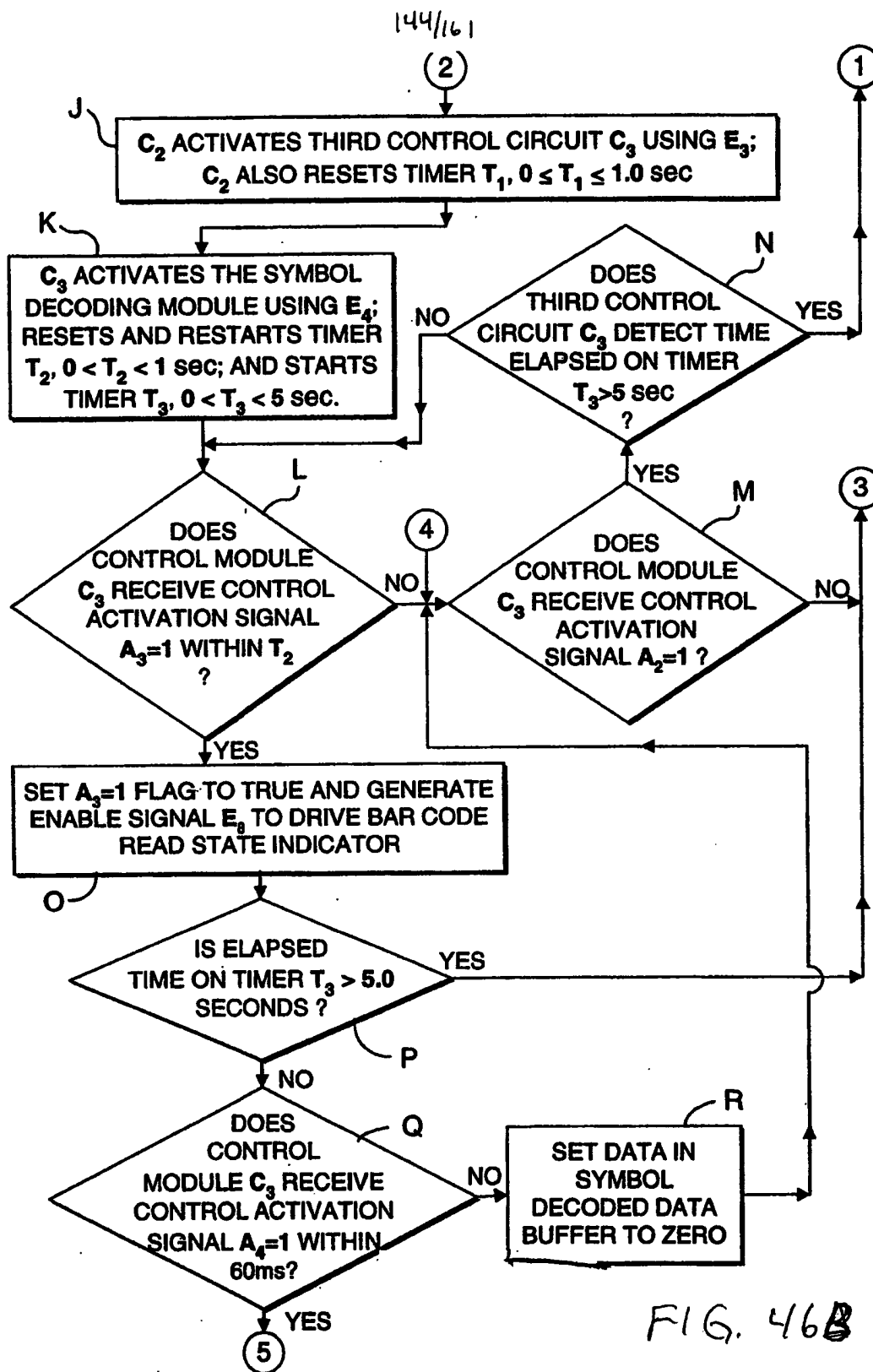


FIG 46A2





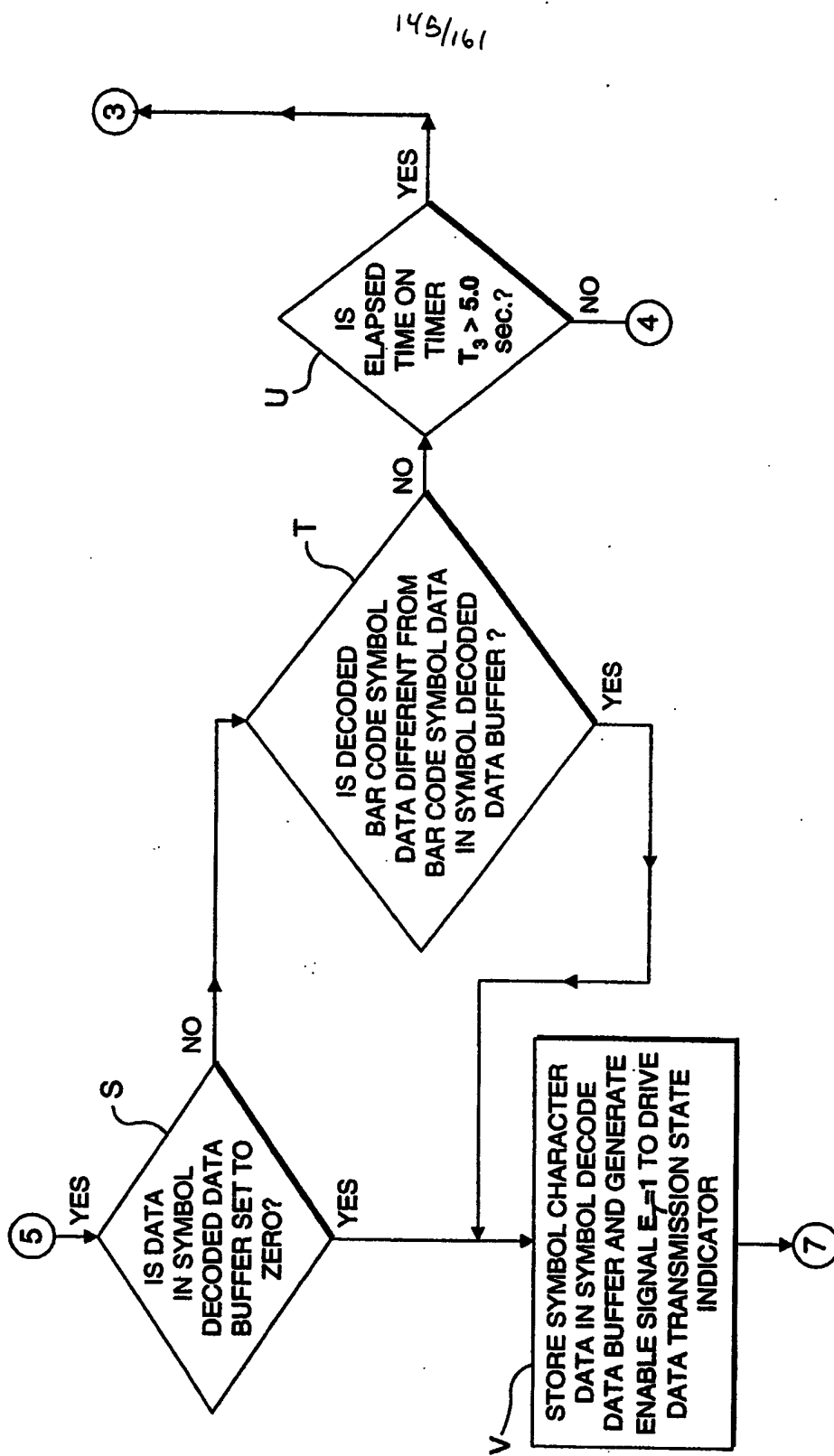


FIG. 46C1

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7

THIRD CONTROL CIRCUIT  $C_3$  CONTINUES ACTIVATION OF LASER DIODE, SCANNING MOTOR, PHOTORECEIVING CIRCUIT, A/D CONVERSION CIRCUIT; DEACTIVATES SYMBOL DECODING MODULE; AND COMMENCES ACTIVATION DATA PACKET SYNTHESIS MODULE

UNDER  $C_3$  CONTROL, DATA PACKET SYNTHESIS MODULE CONSTRUCTS DATA PACKET CONSISTING OF SYMBOL CHARACTER DATA, TRANSMITTER NUMBER, DATA PACKET GROUP NUMBER, CHECK CHARACTER AND FRAMING CHARACTERS

IS IN-RF RANGE CONFIRMATION Signal  $A_5=1$ ?

NO

YES

NO

ARE DATA PACKET Group(S) STORED IN DATA PACKET GROUP BUFFER?

YES

$C_3$  Control Module Generates Enable Signal  $E_{11}=1$  Reloading Buffered Data Packet Group(S) into Data Packet Transmission Circuit

Control module  $C_3$  Generates Enable Signal  $E_{10}=1$  loading currently Synthesized Data packet Group into Data packet Transmission Circuit

11

FIG. 46C2

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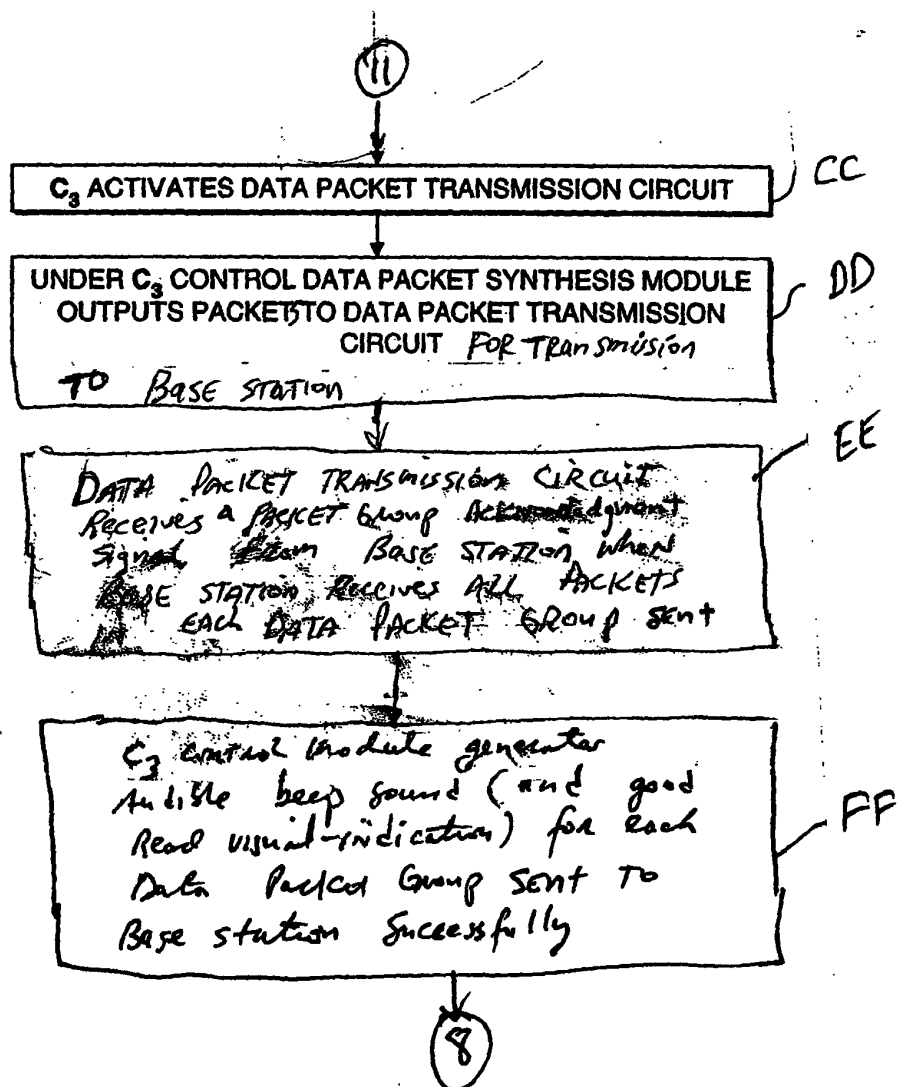


FIG. 46C3

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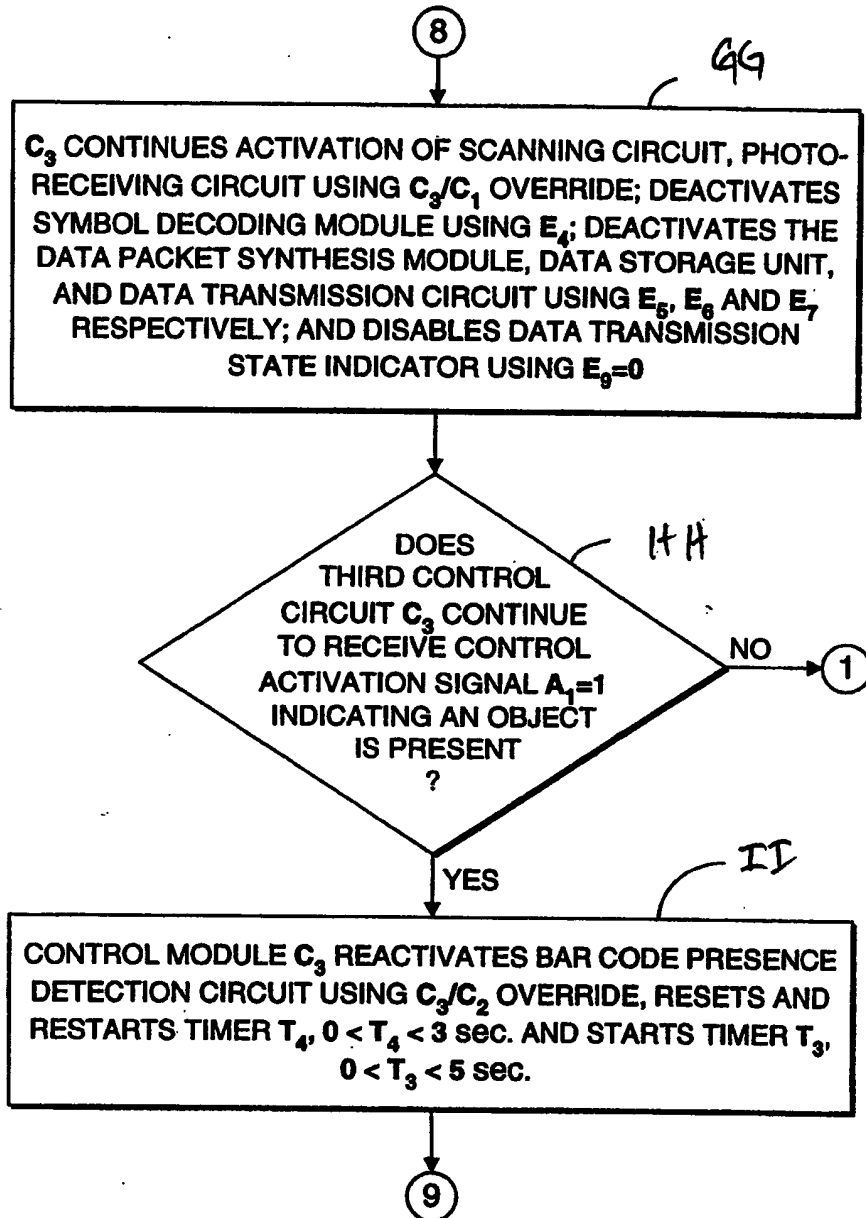


FIG 46 C4

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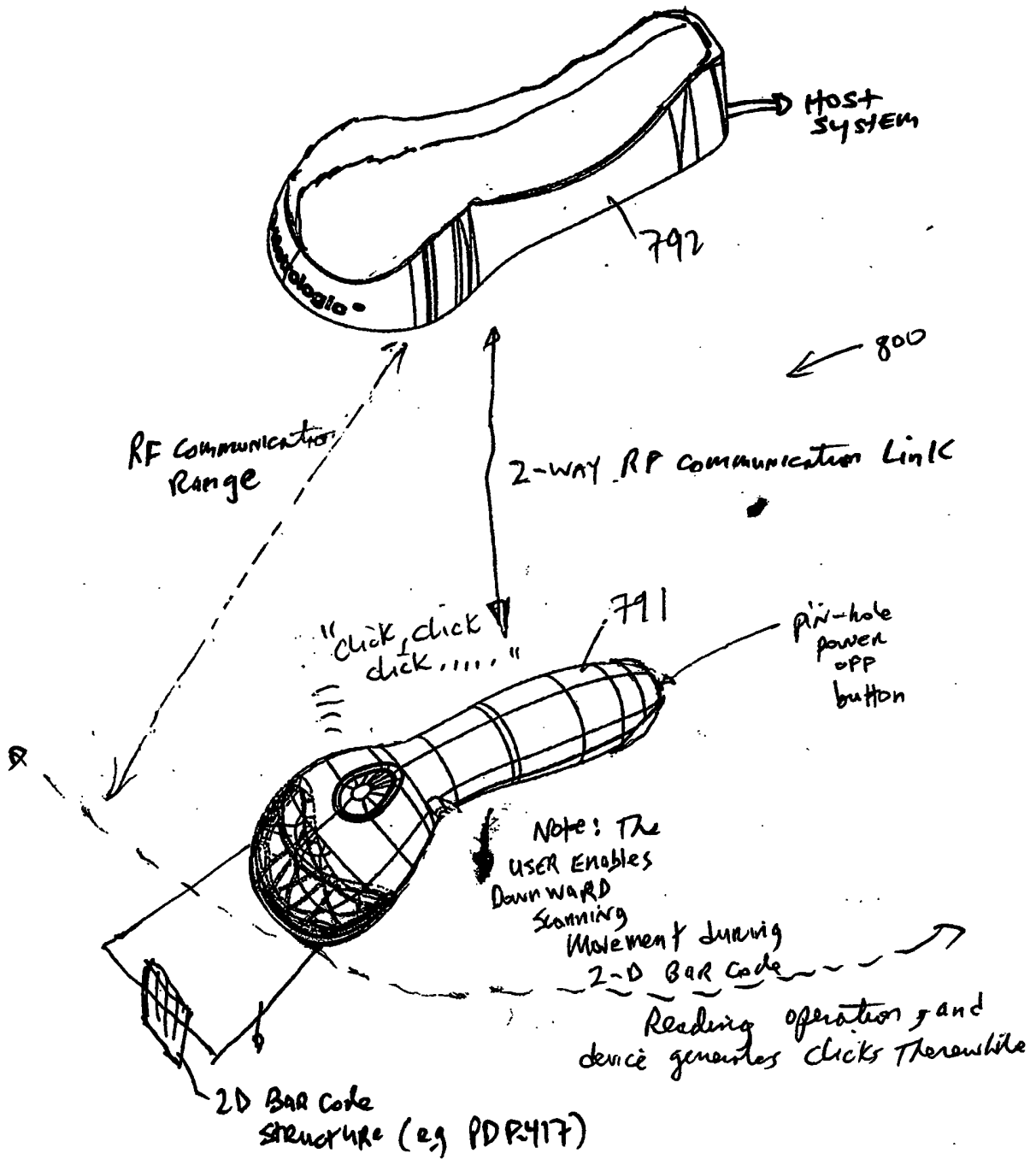
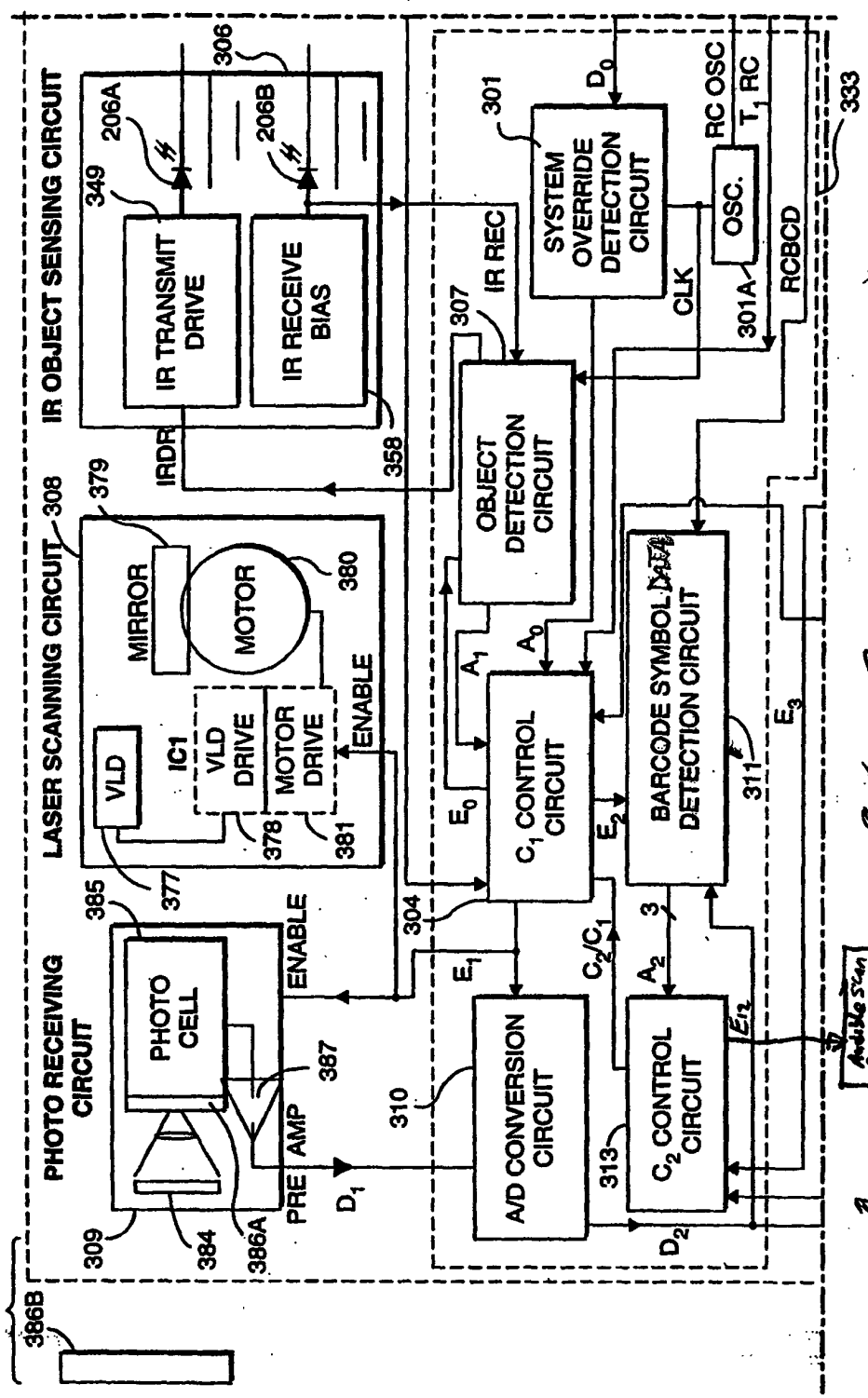


FIG. 47

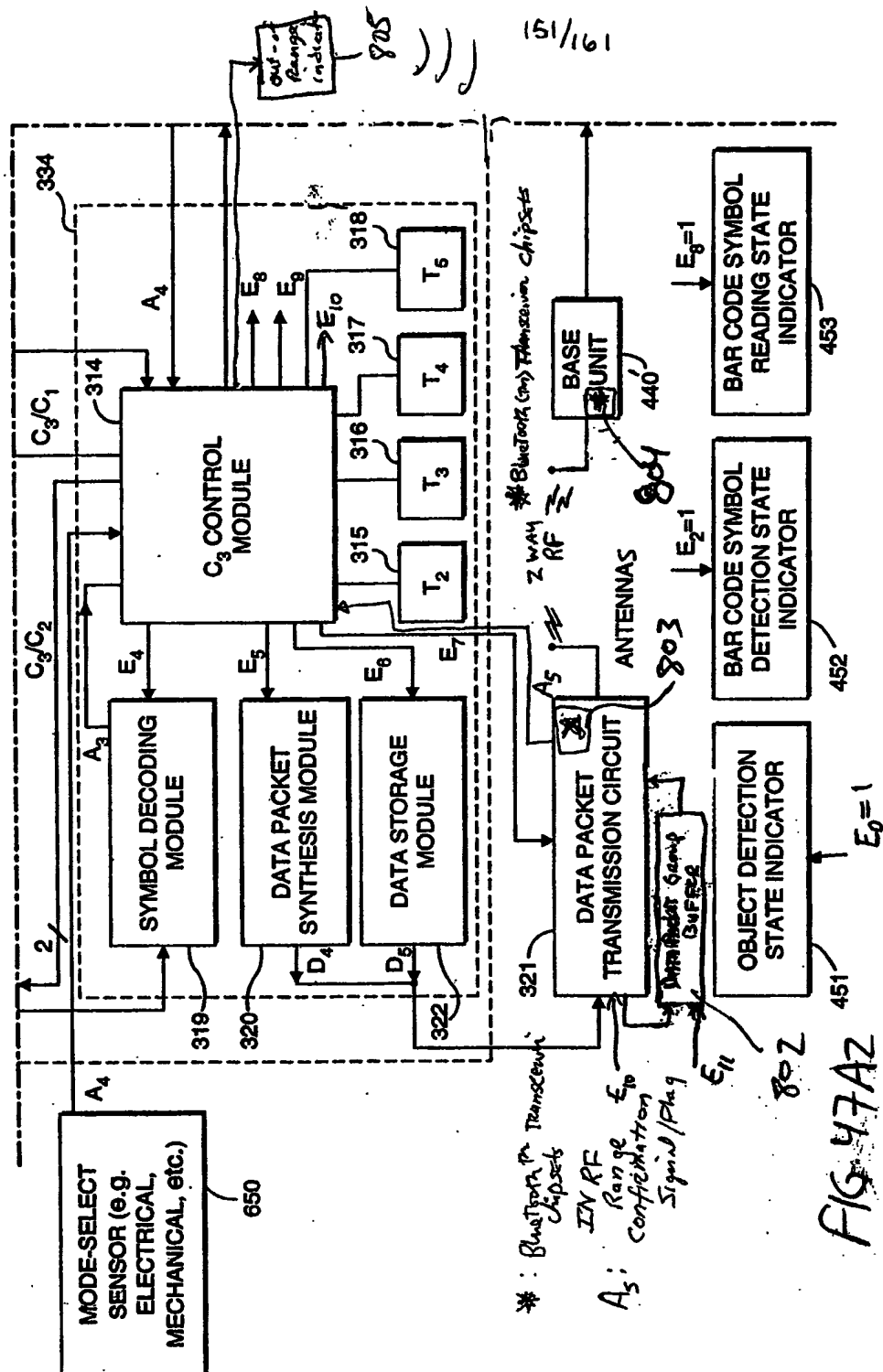
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806 FIG. 47A1  
(A 20-electric transducer)

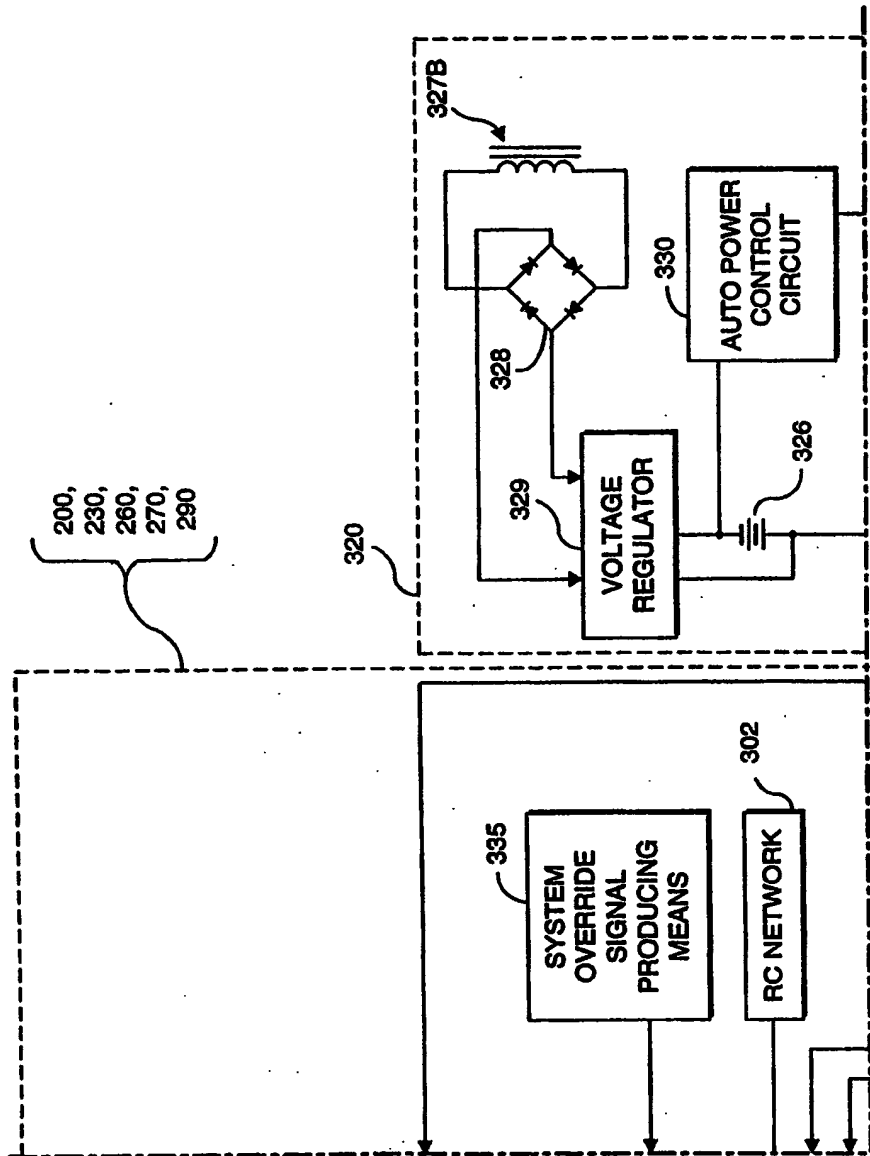
Available Scan Data Capture Buffer Transducer

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FIG 47A3





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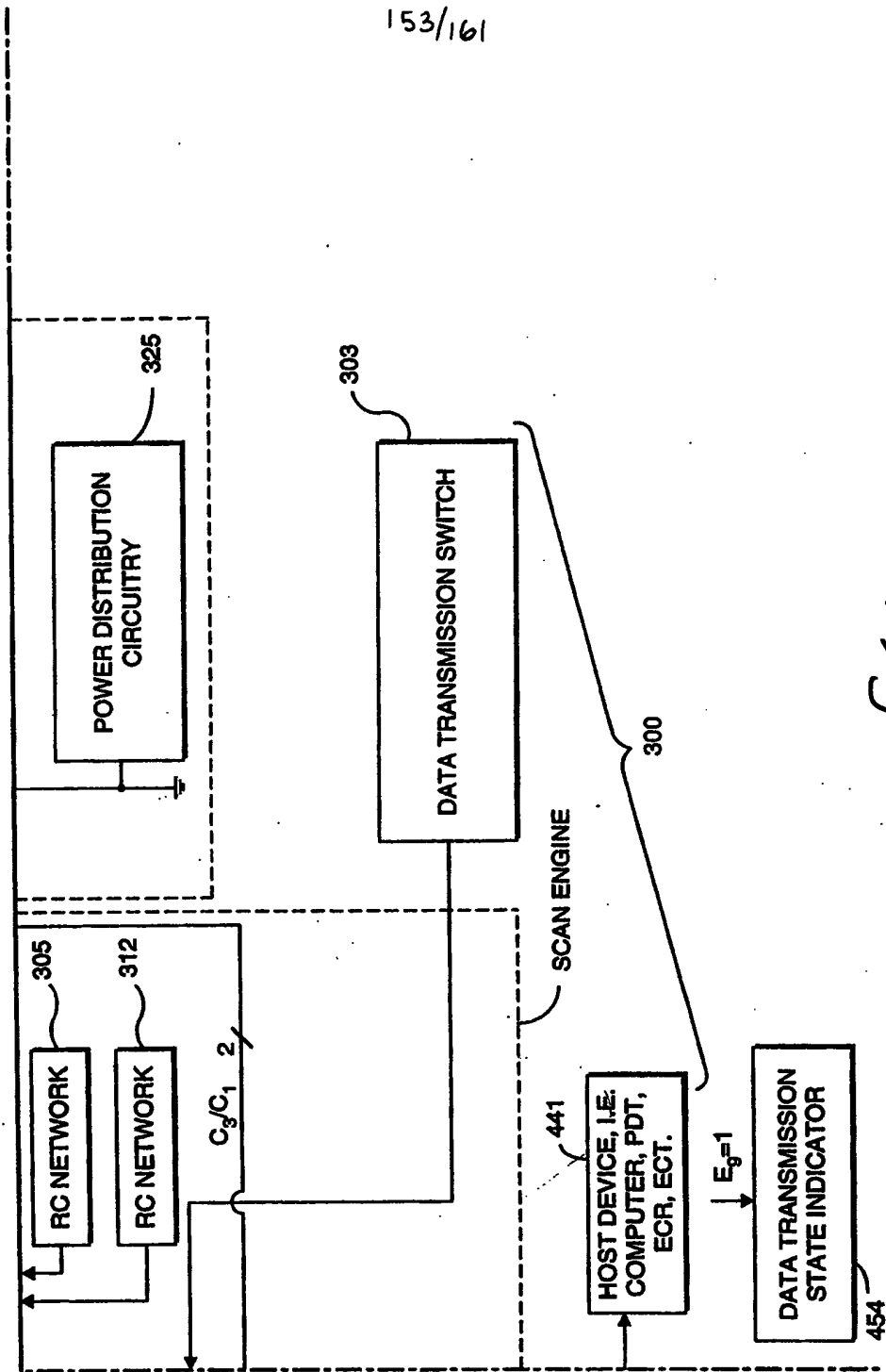
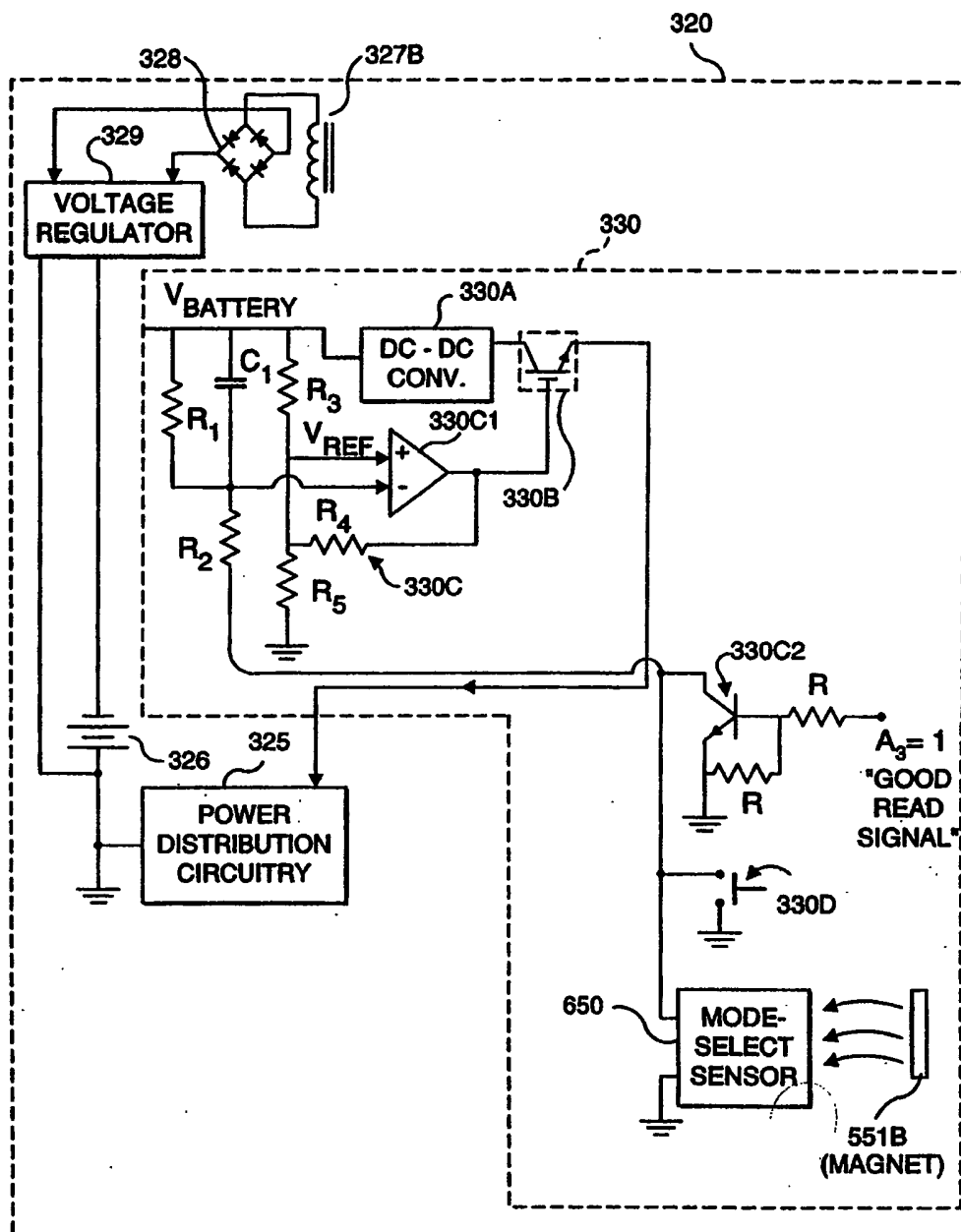


FIG. 47A4



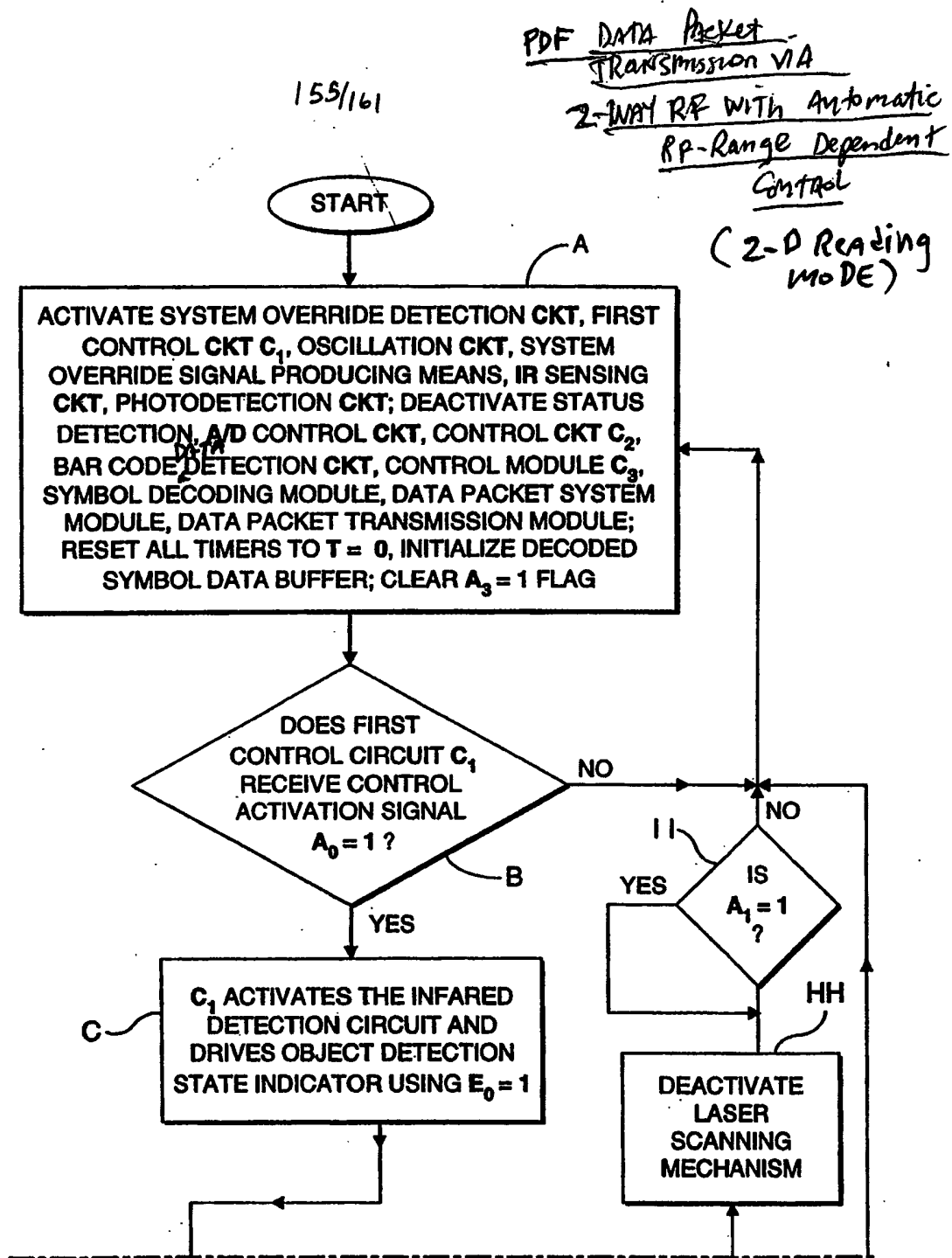
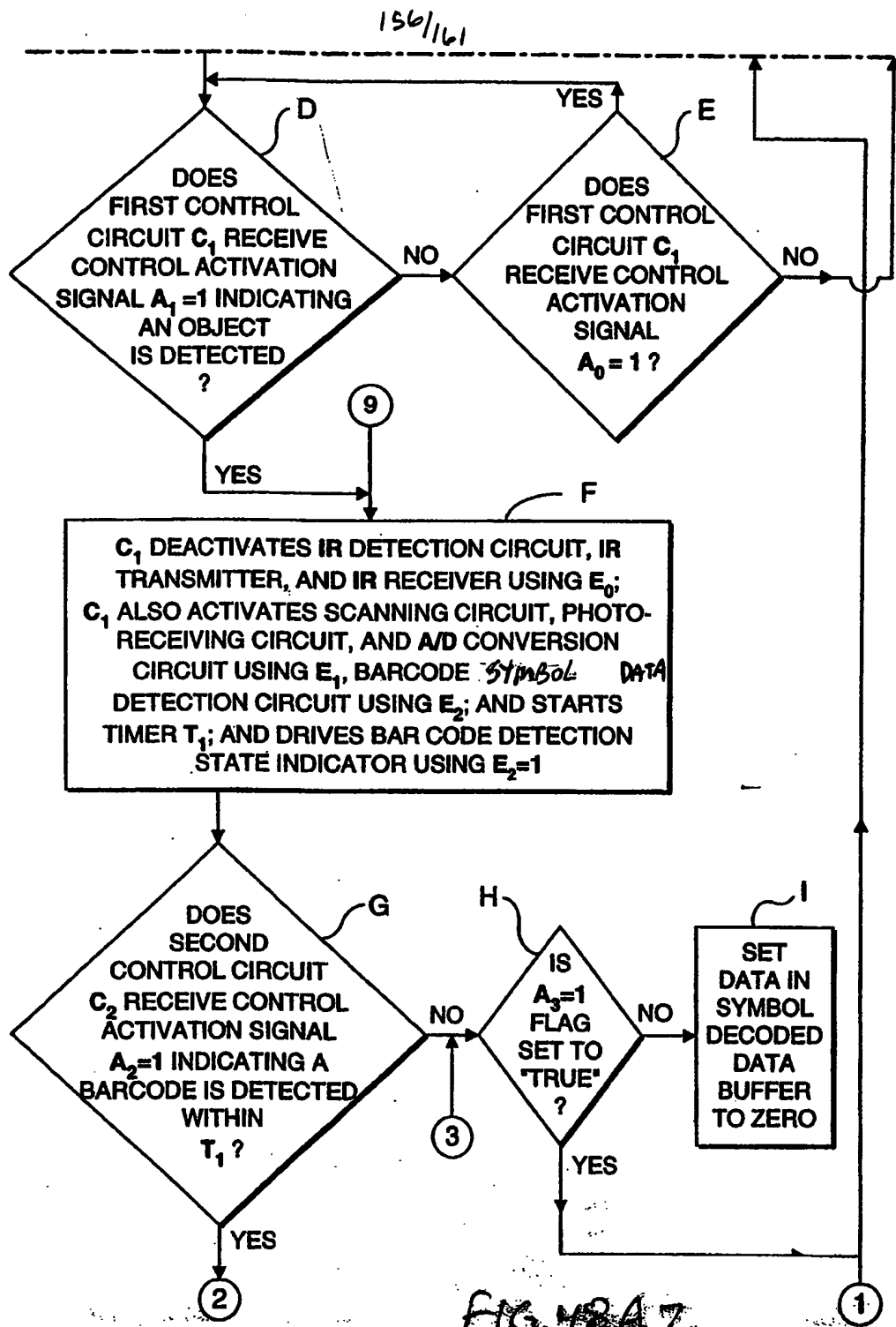
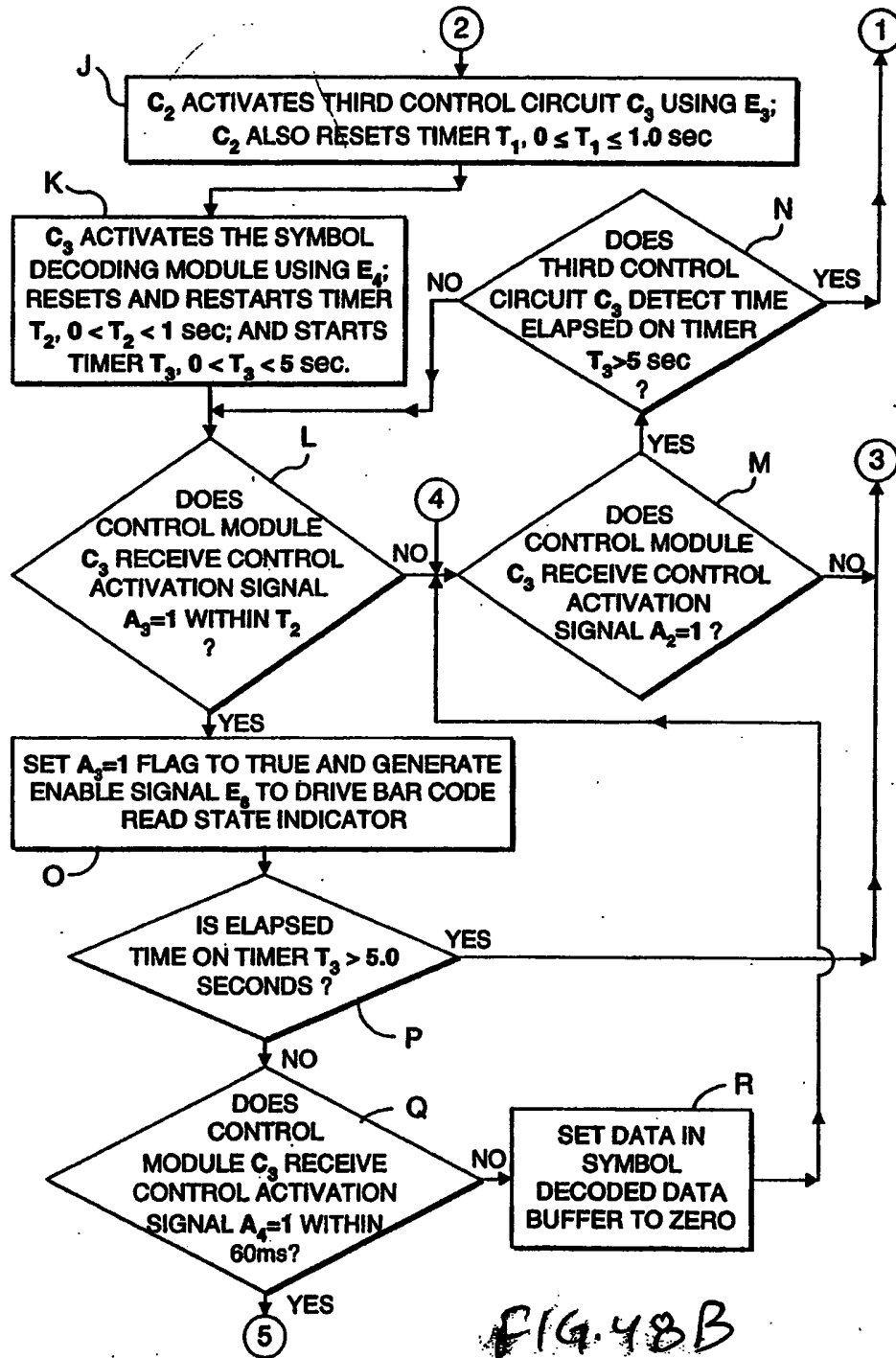


FIG. 48A1



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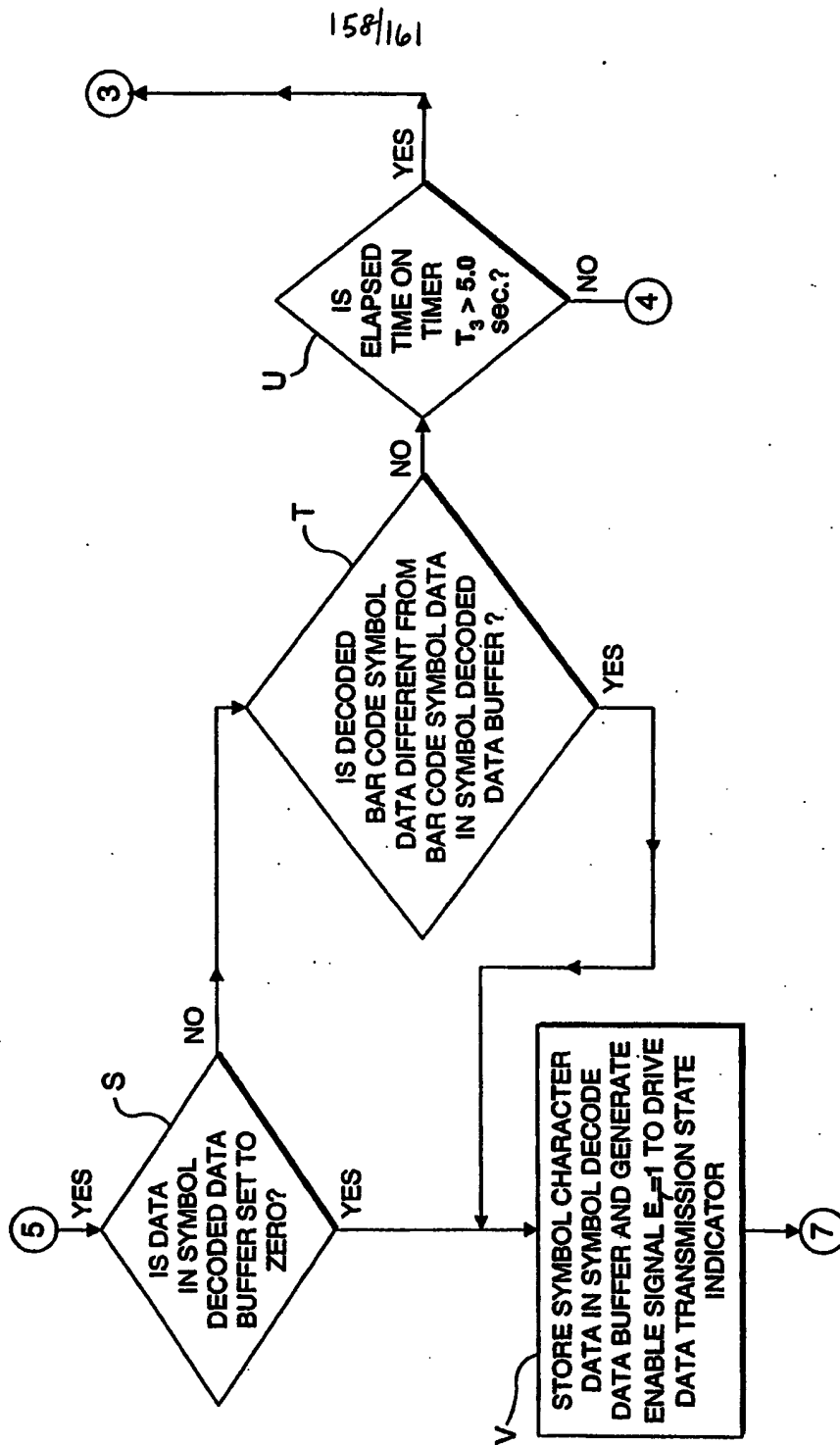


FIG. 48C1

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7

THIRD CONTROL CIRCUIT  $C_3$  CONTINUES ACTIVATION OF LASER DIODE, SCANNING MOTOR, PHOTORECEIVING CIRCUIT, A/D CONVERSION CIRCUIT; DEACTIVATES SYMBOL DECODING MODULE; AND COMMENCES ACTIVATION DATA PACKET SYNTHESIS MODULE

W

UNDER  $C_3$  CONTROL DATA PACKET SYNTHESIS MODULE CONSTRUCTS DATA PACKET CONSISTING OF SYMBOL CHARACTER DATA, TRANSMITTER NUMBER, DATA PACKET GROUP NUMBER, CHECK CHARACTER AND FRAMING CHARACTERS

X

IS IN-RANGE CONFIRMATION SIGNAL  $A_5=1$ ?

NO

10

YES

ARE DATA PACKET GROUP(S) STORED IN DATA PACKET GROUP BUFFER?

NO

Z

YES

$C_3$  Control Module Generates Enable Signal  $E_{11}=1$  Reloading Buffered Data Packet Group(s) into Data Packet Transmission Circuit

AA

Control module  $C_3$  Generates Enable Signal  $E_{10}=1$  loading currently Synthesized Data packet Group into Data Packet Transmission circuit

BB

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FIG. 48CZ

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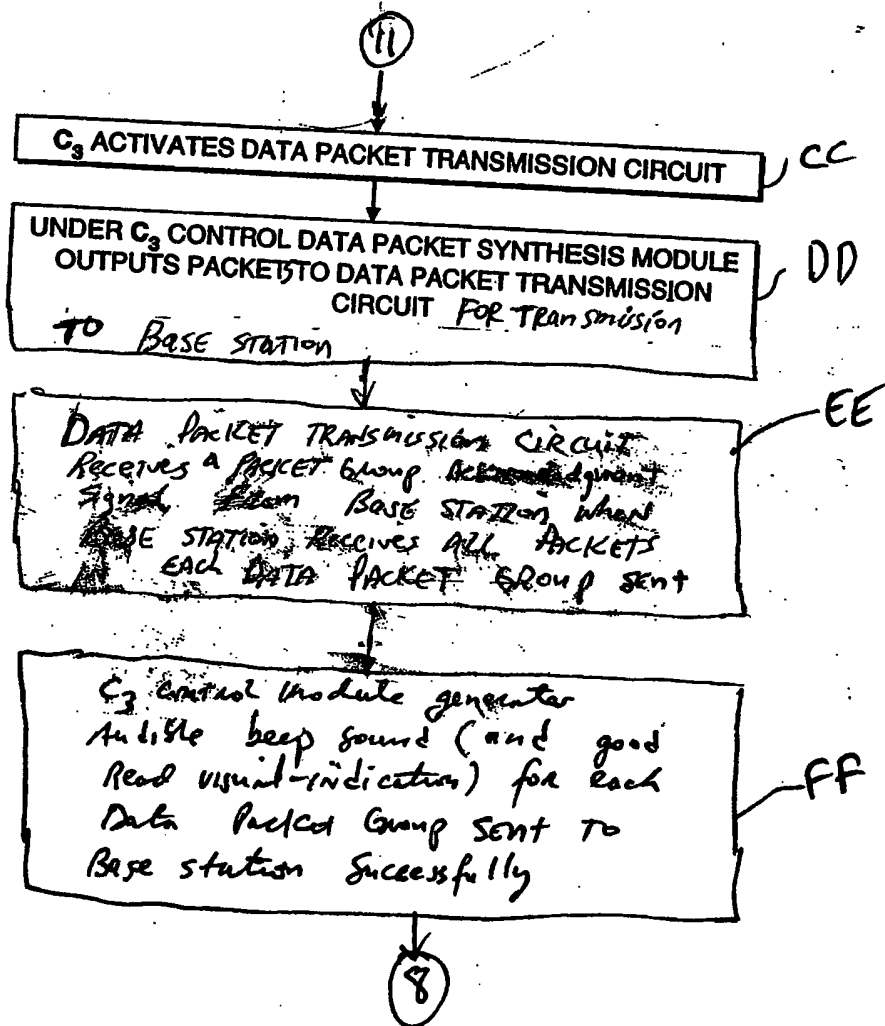


FIG. 48C3



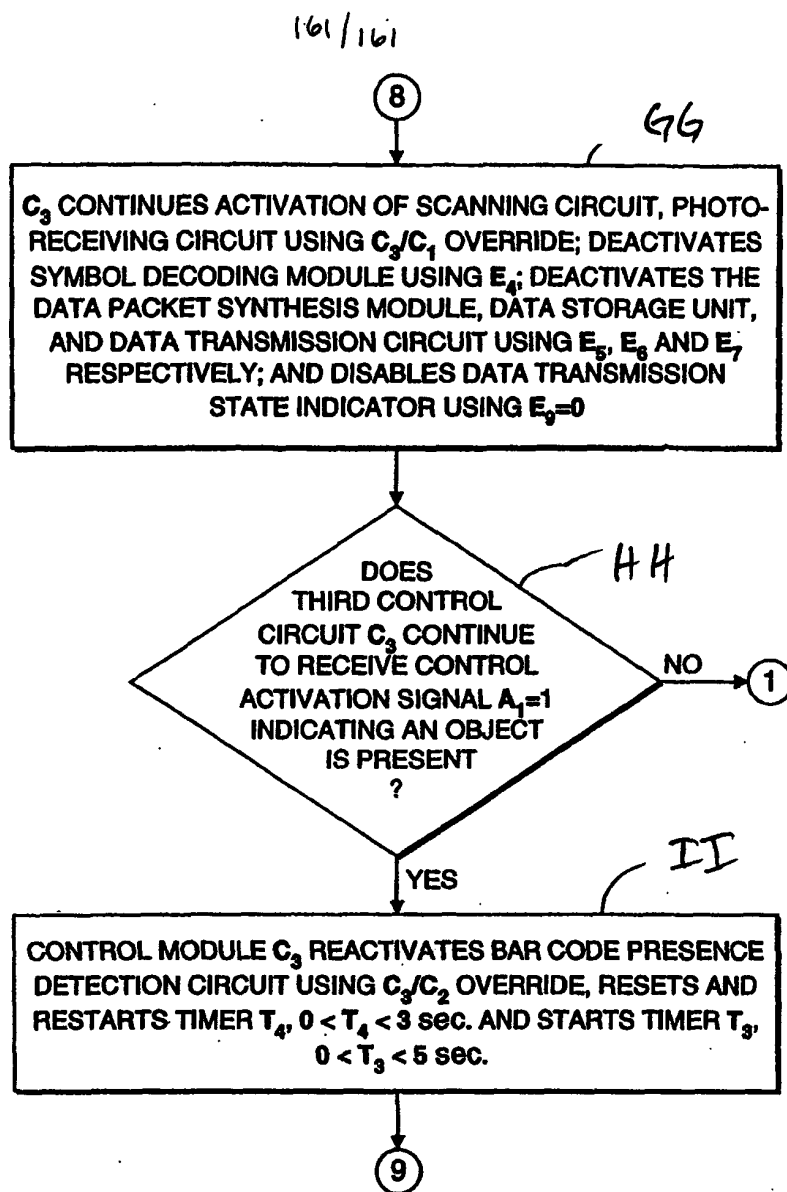


FIG. 48C4